



Sponsored Projects

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WEST VIRGINIA UNIVERSITY

School of Pharmacy Research Handbook: Pathways to Success



Produced by:
West Virginia University School of Pharmacy
Office of Research and Graduate Programs
and the
West Virginia School of Pharmacy's Graduate and Research Advisory Committee

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Mission Statement

Mission: The mission of the Sponsored Projects Unit of the Research Division of the WVU School of Pharmacy's (SoP) Office of Research and Graduate Programs is to prepare and equip SoP faculty and staff to successfully compete for— and manage— extramural funding from government, foundation, and industry sources.

Vision: To increase both the number of sponsor-funded research and education projects and the total dollar amount awarded to the SoP, thereby enabling our scientists to fully realize their research and professional potential and boost measured rankings in comparison with other schools of pharmacy.

Values: Diligence, teamwork, and the development of our knowledge, skills, and experiential base puts us on the pathway to success.

Strategy: Faculty and staff at the SoP receive targeted training, technical assistance, and general follow-up that equips and enables them to develop research ideas, research available sources of funding, craft competitive funding proposals, and successfully manage projects and funding once awarded. In addition, the Grants Administrator (GA) serves as the main point of contact in the grants process. The role of the GA includes guiding faculty and staff through the process of competing for— and then receiving —funding dollars; trouble-shooting when needed, and generally and continually identifying ways in which this may be accomplished more efficiently and effectively.

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Introduction

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Message from the Associate Dean for Research and Graduate Programs

As the centennial anniversary of its founding approaches, it is interesting to look back and reflect on how the West Virginia School of Pharmacy has evolved. From its humble beginnings in the basement of Woodburn Hall on our downtown University campus, to becoming a School in the Robert C. Byrd Health Sciences Center, our path as a learning institution has taken several twists and turns throughout the years, yet we've always moved forward.



The School has gone through many changes, but one critical factor has always remained the same — our mission to improve the health and well-being of West Virginians and society at large. The WVU School of Pharmacy continues to serve as the State's finest training ground in educating our future pharmacists and researchers to be the leaders of tomorrow.

The teaching, research, and community service projects that take place at the School are rooted in our mission and touch almost every aspect of people's lives. Each project, grant, and activity begins with the end in mind — how will this change the lives of our community members for the better? We reach out and embrace the diverse population and healthcare needs of our state, creating programs and conducting research that will best serve them and society as a whole.

Yet we realize that the projects that will impact the health and lives of our community are not possible without funding to conduct this critical research. As the University and Health Sciences Center moves forward implementing its strategic plan, the need for an enhanced focus on research and extramural funding has never been more visible and important.

The information in this document is intended to help new and seasoned researchers lay the groundwork for building successful grant applications and research programs. It is our hope that this document will assist in exploring how the School of Pharmacy, the Health Sciences Center, and the WVU Office of Sponsored Programs (WVU OSP) can help you build a foundation of knowledge and experience that will enable you to follow your pathway to success and meet your professional goals and those of the School of Pharmacy.

Warm regards,

Rae R. Matsumoto

Rae R. Matsumoto, PhD
Associate Dean for Research and Graduate Programs, WVU School of Pharmacy

About This Document

Identifying research opportunities, forming a research team (if needed), and developing and submitting proposals are all necessary steps to receiving research funding at the West Virginia University School of Pharmacy (SoP). This document is designed to provide helpful information and technical assistance to School of Pharmacy faculty, staff, and others interested in seeking extramural funding for sponsored projects by addressing each phase of the grants process.

Using the information and instructions in this document enables the reader to review and select potential funding sources, properly prepare most funding proposals, and manage funding dollars and project deliverables once an award is granted. As the reader reviews the document, it must be kept in mind that sponsored projects administration is a joint effort between the Principal Investigator (PI), the School of Pharmacy, and the University. The PI is held accountable for the proper fiscal management and conduct of the project. The PI is also responsible to the University and to the sponsor for ensuring that the scope of work for which the award was made is completed, that University policies and procedures are adhered to, and that funds are expended in accordance with the awarded budget and sponsor terms and conditions.

While the PI may delegate some responsibility for day-to-day management of finances and other tasks to departmental or school business staff, the PI remains accountable for the successful submission of a proposal and, once awarded, compliance with University policy and the regulations and guidelines set forth by the funding agency. As the reader will note, even after the project has expired, the PI continues to be responsible for closeout and intellectual property requirements of the University and the sponsor; including but not limited to, final technical reports, submission of invention disclosures, and satisfying subcontract/consortium contractual requirements, and other reports as required.

Much of the information in this document is original. However, information is also taken from original source material. This handbook is designed to assist the SoP researcher to navigate through the grants process from initial idea for a sponsored project to grant closeout. Bear in mind it is not a comprehensive “how-to” tome that will leave the reader with all possible questions answered. This document, along with the training and technical assistance provided by the faculty and staff at the SoP Office of Research and Graduate Programs, the Office of the Vice President of Research and Graduate Education at the HSC, and support from the WVU Office of Sponsored Programs, will help ensure your success as a funded researcher.

This section includes the following information:

- Who should use this document
- How this document is organized

Who Should Use This Document

This document is for anyone who is, or plans to, obtain and manage extramural funding. This is also designed to help those who work with and assist those seeking or currently managing extramural funding. However, training, technical assistance, and follow up are also provided by the Associate Dean for Research and Graduate Programs and the Grants Administrator to help ensure your success.




Resources are also provided by our success partners at the Health Sciences Center (HSC) and the West Virginia University Research Corporation's (WVURC) Office of Sponsored Programs (WVU OSP) as well. Therefore, please understand that you are not alone in this endeavor and that you have resources and people around you committed to your success!

Document Organization

CONTENT



This handbook provides an overview of the organizational structure at West Virginia University (WVU) dedicated to your success as a funded researcher. Next, we review the grants process to include pre-award, post-award management, and grant closeout. Following that, a resources and appendices section identifies and reviews organizations and programs that provide funding opportunities—typically through funding announcements, WVU forms required for proposal submission, the information needed to complete these forms, and the institutional facilities and resources available to those seeking research funding. Ultimately, the goal is to familiarize the reader about the grants process and how to use available resources to obtain and effectively manage grant funding. Content from source documents is unabashedly “borrowed” from original source documents, web sites, and other sources to complete this document. The publisher of this document saw no reason to recreate an entirely new document from the beginning plus a multitude of links are provided in this document for the reader to navigate to original source documents if they wish.

ICONS AND OTHER TYPOGRAPHICAL CONVENTIONS

ICON KEYS	
	Click Here To Take Me to More Detailed Information*
	Checklist/Process
	Success Partner
	Important Info
	Click Here To Take Me Back to Previous Text *
	Caution

*Electronic Version Only

The icons used in this manual are designed to provide the reader with visual prompts to enhance the learning process. When these appear in the document, note the icon and the text beside which it appears. In general, handbook icons are used to identify helpful information. This information may help with the understanding of particular information provided, or alert the reader to a possible outcome due to a change of events or not adhering to the information and direction provided in the manual. In the electronic version of this document, links will be established between its

main section “  ” and its resources section in order to provide the reader with more comprehensive information. A corresponding arrow “  ” will return the reader back to the original text in the main section.

KEY ACRONYMS USED IN THIS DOCUMENT

AACP - American Association of Colleges of Pharmacy

AFPE - American Foundation for Pharmaceutical Education

AHRQ - Agency for Healthcare Research and Quality

AMCP - Academy of Managed Care Pharmacy

ASHP - American Society of Health-System Pharmacists

CAMC - Charleston Area Medical Center

CTSA- Clinical and Translational Science Award

CPCE - Mylan Center for Pharmaceutical Care Education (At the School of Pharmacy)

DA - Departmental Activity

DHS - Department of Homeland Security

DHHS - Department of Health and Human Services

DURIP - Defense University Research Instrumentation Program

EBO - Expert Business Office

ERA - Electronic Research Administration

ESIs - Early Stage Investigators

EPSCoR - Experimental Program to Stimulate Competitive Research

F&A - Facilities and Administrative (costs)

FOA - Funding Opportunity Announcement

HSC - Health Sciences Center

IBC - The Institutional Biosafety Committee

IHS - Indian Health Service

MAP - Mountaineer Administrative Processes

NACDS - National Association of Chain Drug Stores

NCPA - National Community Pharmacists Association

NCRR - National Center for Research Resources (NIH)

NDSEG - National Defense Science and Engineering Graduate Fellowship Program

NIH - National Institutes of Health

NIOSH - National Institute for Occupational Safety and Health (CDC/)

NRSA - National Research Service Awards

NSF - National Science Foundation

OSP - Office of Sponsored Programs (Also WVU OSP)

OIT - Office of Technology Transfer

OIT - Office of Information Technology (Also WVU OIT)

ORIC - The Office of Research Integrity and Compliance

PA - Program Announcement

PhRMA - Pharmaceutical Research and Manufacturers of America

PI - Principal Investigator or Pathway to Independence Award (through NIH)

RFA - Request for Applications

RFP - Request for Proposal

SoP - School of Pharmacy

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People and Places

WVU Research Corporation and its Office of Sponsored Programs

HOW THE WVU RESEARCH CORPORATION AND THE OFFICE OF SPONSORED PROGRAMS SERVES OUR FACULTY AND OUR SCHOOL

The WVURC was created as a not-for-profit corporation in 1985 to foster and support research at West Virginia University, and provide evaluation, development, patenting, management, and marketing services for inventions of the faculty, staff, and students of the University.



The WVURC receives and administers funds awarded by external agencies for research and other activities and is responsible for helping protect intellectual property through patents, copyrights, and licensing agreements for start-up companies based on University research. The Office of the Vice President for Research and Economic Development and its units offer a host of services to WVU staff and researchers. These include:

Interim Associate Vice President for Research and Economic Development

The Office of the Interim Associate Vice President for Research and Economic Development assists individual investigators and collaborations for research and is the principal contact with federal, state, and private-sector funding sources. The Office ensures the competency of the University research program to potential sponsors.

WVU EPSCoR

The WVU EPSCoR program provides foundation support enabling the research of linking faculty research teams with key instrumentation and equipment to implement their project. The program also provides support for the collaboration between West Virginia University and Marshall University in the area of molecular/life sciences.

WVU Office of Research Integrity and Compliance

Office of Research Integrity and Compliance is committed to helping faculty, staff, and students comply with all applicable federal, state, and institutional requirements and policies. Research compliance areas covered by this office include Human Subjects Protections, Animal Welfare, Biosafety, and Conflict of Interest.

WVU Office of Technology Transfer

The WVU Office of Technology Transfer coordinates policies and provides forms and other useful information related to Intellectual Property and Technology Transfer activities at WVU. The office exists to help faculty deal with commercialization issues and to help entrepreneurs create new products based on the inventions and creations of WVU personnel.

WVU Business Incubator

The mission of the WVU Business Incubator is to promote economic development by supporting entrepreneurs, advancing entrepreneurial activities, and nurturing early-stage businesses with space, facilities, and support services.

WVU Research Park

The WVU Research Park was created to capitalize on the University’s rapid emergence as a research organization focused on driving knowledge-based economic development and advancing technology transfer and commercialization of its inventions.

WVURC Human Resources Office

The WVURC Human Resources Office supports research infrastructure and economic development opportunities at WVU by providing flexible, responsive recruitment, and employment services for its sponsored activities.

Office of Federal Relations

The Office of Federal Relations coordinates communication between WVU researchers/administrators and representatives of federal agencies and Congressional Offices.

WVURC Office of Communications

The Office of Communications assists in the dissemination of information about WVU research results by working with the news media, appropriate WVU research departments, and Research Corporation administrators.

WVU Office of Sponsored Programs

The Office of Sponsored Programs (OSP) provides pre-award, contracting, and post-award services to faculty and researchers regarding grant procedures and processes. OSP staff supports the submission of high-quality proposals by assisting with sponsor regulations, electronic submission systems, and financial review and approval of proposals. OSP staff members work also with researchers to review and negotiate contracts. Post-award services include account set up, invoicing, and compliance with sponsor requirements. The OSP also publishes its **Grant Proposal Guide** to assist faculty in proposal preparation (<http://osp.research.wvu.edu/r/download/38145>). More detailed discussions of the services provided to faculty appear in the “Grant/Funding Process” and “Resources/Appendices” sections.



WVU Health Sciences Center (HSC)

MISSION

The mission of the West Virginia University Health Sciences Center is to improve the health of West Virginians through the education of health professionals, through basic/clinical scientific research and research in rural health care delivery, through the provision of continuing professional education, and through participation in the provision of direct and supportive health care.

General Information about the HSC

The WVU Robert C Byrd Health Sciences Center (HSC), one of only 11 land-grant institutions in the nation that offer a single comprehensive health sciences campus, exists two miles north of the main undergraduate campus and has four accredited Schools—Medicine, Pharmacy, Dentistry and Nursing. The HSC maintains active clinics for patient care, lecture rooms for teaching and seminars, and has 166,383 square feet of dedicated research space. The HSC is undergoing expansive growth substantiated by three new facilities that have just been completed:

- The Erma Byrd Biomedical Research Center – a \$41M, four-story, 126,000 square foot research building that has three floors dedicated to research with bench space for 72 research staff scientists on each floor, opened in August 2008
- The Blanchette Rockefeller Neurosciences Institute (BRNI) – a \$30M, three-story, 78,000 square foot research facility including a new vivarium, dedicated to neuroscience research, opened in October 2008
- Expansion of the Mary Babb Randolph Cancer Center – a \$22M, four-story, 70,000 square foot expansion of the Cancer Center with partial occupancy in January 2009, with renovation of an additional 17,000 square feet of space. This construction project includes: ~5,000 square foot Clinical Trials Research Unit for investigational drug monitoring (nine infusion bays and three beds for patients enrolled on Phase I/II trials) and research administration space (2nd floor); adds approximately 6,500 square feet of wet laboratory space and approximately 5,000 square feet of administrative space (3rd floor); and approximately 16,000 square foot simulation center for the School of Medicine (4th floor). Altogether, approximately 150,000 square feet of space is dedicated to Cancer Center programs.

This new dedicated research space enables WVU to recruit new research-intensive faculty members over the next several years. The HSC is led by Chancellor Christopher Colenda who reports to the President of the University and is responsible for integrating the research, education, clinical, and service missions of the four schools. Overall, the biomedical graduate program is centralized and all 25-30 students admitted into the PhD program each year are trained in a common curriculum during their first year in graduate school, then select a lab and receive advanced training in their field of study, including research and advanced coursework. Currently there are 127 PhD students, 35 MS students, and 22 postdoctoral fellows in the HSC. In general, research faculty has less than 25 contact/ teaching hours per year assigned to them by their department chair. Clinical departments focus on patient care, managing Phase III trial activity, cooperative group studies, and the training of fellows. Centers promote translational research and oversee pre-clinical studies, Phase I/II clinical trials, and community-based trials. Centers for Cancer, Cardiovascular and Pulmonary Sciences, and Neuroscience research are the most mature, active in the HSC, and draw upon the research strengths of the basic science departments and patient care missions of the clinical departments with a focus on translating discoveries to the clinic and into the community.

SCHOOLS, CENTERS, AND FACILITIES AT THE HSC

HSC School
Information

Schools at the Health Sciences Center (HSC) consist of the Schools of Pharmacy, Dentistry, Medicine, and Nursing, and major activities include teaching, research, healthcare, and other activities providing health-related services to the citizens of the State of West Virginia. In addition, the establishment of a new school of Public Health is being established in line with the recently completed HSC Strategic Plan.

Mission

The mission of the West Virginia University School of Pharmacy is to improve the health and well-being of West Virginians and society at large by educating students and practitioners to provide optimal pharmaceutical care; conducting vital research that advances scientific knowledge, pharmacy practice, and economic development; and providing direct and supportive services to patients, the community, and the profession.

Academic Programs

PRE -
PHARMACY

The West Virginia University Doctor of Pharmacy Program comprises four years of professional study preceded by a minimum of two years of pre-pharmacy coursework in a US accredited college of arts and sciences. The primary objective of the School of Pharmacy is to educate practitioners for current and future roles in the profession of pharmacy and to educate pharmaceutical scientists for careers in teaching and research.

To prepare for the professional curriculum, students must complete a pre-pharmacy curriculum that emphasizes the biological and physical sciences. In addition, pre-pharmacy students must complete a variety of courses of their choosing in the arts, humanities, and social sciences. Students completing prerequisite coursework at a college outside of West Virginia should consult their academic advisor to help identify course equivalencies. All prerequisite courses must be completed with a grade of “C” or better.

High school students should prepare for the pre-pharmacy curriculum by focusing on the sciences, including higher mathematics (e.g., calculus). Students considering pharmacy as a career are encouraged to obtain exposure to professional practice via job shadowing or work experience. Good oral and written communication skills are essential.

DOCTOR OF
PHARMACY
(PHARM D)

West Virginia University School of Pharmacy graduates are recognized statewide and nationally as leaders in their profession. Pharmacy has been offered as a major at WVU for over 90 years. Its mission is to educate students and practitioners to function at the highest level of contemporary pharmacy practice, to conduct research that advances scientific knowledge, and to deliver quality professional services. The WVU School of Pharmacy curriculum leads to a Doctor of Pharmacy (PharmD) degree. The curriculum emphasizes a strong science background related to the contemporary practice of pharmacy. Students must have an understanding of the chemistry and pharmacology of drugs, dosage forms, pharmacokinetics, pathophysiology, therapeutics,

and the behavioral and administrative aspects of practice and the healthcare system. Coursework emphasizes written and oral communication skills, utilization of case studies, problem-based learning, and computer literacy.

The School of Pharmacy is home to the Mylan Center for Pharmaceutical Care Education (CPCE). The Center includes classrooms with state-of-the-art computer and audiovisual equipment and a model pharmacy where students can gain real hands-on experience and evaluate their performance by reviewing video footage. The WVU School of Pharmacy has over 300 students in its professional Pharm.D. and approximately 50 students in its graduate (PhD) degree granting programs. Approximately 90 students are admitted to the professional (PharmD) program each year. West Virginia University is fully accredited by the North Central Association of Colleges and Schools and also by the American Council on Pharmaceutical Education.

GRADUATE
PHD

In general, four to five years are required to complete the PhD program. Students have to complete core courses, take at least 30 hours of course work, pass a candidacy exam (in written and oral), complete a publication requirement, and successfully defend their dissertation research. There are two pathways in the Graduate Program in Pharmaceutical and Pharmacological Sciences: 1) Health Outcomes, and 2) Pharmaceutical and Pharmacological Sciences. Students in the Health Outcomes pathway are admitted directly into the School of Pharmacy. Students in the Pharmaceutical and Pharmacological Sciences pathway are initially admitted to WVU through the Interdisciplinary Graduate Program in Biomedical Sciences, and then enter the program as second year students after successfully completing the required first year core curriculum.

School of Nursing

Mission

The mission of the West Virginia University School of Nursing is to serve the people of West Virginia and larger society through education, research and service, including faculty practice. This mission is responsive to changing health care needs and emerging national and state changes in technology and health care delivery and is enhanced by a supportive and open environment. The faculty's educational effort is directed to providing high quality student-centered programs of instruction at all levels which prepare superb professional nurses to meet basic health care needs; advanced practice nurses to address complex health needs; and doctorally educated nurses to advance nursing knowledge through research, to assist in the formulation of policies to improve health care, and to serve as faculty in higher degree programs. Unique characteristics of the state mandate that the health care needs of rural populations and; vulnerable groups be a major focus of education, research and service, including faculty practice.

Academic Programs

The School of Nursing Bachelor of Science in Nursing (BSN) program is recognized by health care agencies as providing students with excellent preparation for the nursing profession. Graduates are in great demand and enjoy a large

number of career opportunities. The program is fully accredited by the Commission of Collegiate Nursing Education of the American Association of Colleges of Nursing. The program prepares college students to begin professional nursing practice with clients of all ages in any health care setting. Graduates are eligible for any position for the professional nurse at the start of his or her career. The program also provides an excellent foundation for graduate study in nursing. Students graduating from the program are eligible for licensure as registered nurses (RN) in West Virginia and all other states.

The BSN is an undergraduate college program. Students do not enroll in the professional program until they are sophomores and have completed the pre-requisite pre-nursing courses. The BSN program, like the other health professions programs is grounded in competencies (outcomes). The outcomes of the BSN program are: critical thinking, nursing interventions, professional role, caring, and communication.

BSN students may enroll on the Morgantown campus for the entire program, or take the freshman and sophomore years at Potomac State College and complete the junior and senior years at the WVU Morgantown campus. The entire program is also offered at West Virginia University Institute of Technology (WVUIT). Students may also take the freshman and sophomore years at Glenville State College and complete the Junior and Senior years at WVUIT.

The curriculum includes courses in the humanities, social sciences, basic sciences, and nursing science. These courses are taken in conjunction with nursing clinical courses. Students apply their learning to actual client, family, and community situations that warrant nursing intervention. In keeping with the University's commitment to improving health care for all West Virginians, all health sciences students complete a rural clinical practice as part of the degree requirements. Nursing students complete the rural clinical practice experience during their senior year.

School of Dentistry

Mission

It is the mission of the West Virginia University School of Dentistry to promote a learning environment that addresses the present and future oral health needs of the citizens of West Virginia and beyond by providing an oral health center committed to excellence and innovation in education, patient care, community service, research, and technology

Academic Programs

In the WVU School of Dentistry, a Doctor of Dental Surgery degree is offered for students who wish to become dentists. To provide students in Dentistry with the necessary clinical experience, the School of Dentistry maintains and operates dental clinics in the Robert C. Byrd Health Sciences Center of West Virginia University. The WVU School of Dentistry has an excellent reputation as the state's only dental school. Over 80% of West Virginia dentists are graduates of the DDS program. The DDS curriculum consists of eight semesters and three summer sessions. Students are enrolled in courses designed primarily to prepare one for the general practice of dentistry. Progress is monitored regularly by the Committee on Academic Standards and a team leader

program that has been initiated to ensure that students have the appropriate learning experiences to achieve competency. The DDS curriculum has recently been revised to provide comprehensive and current course content that is sequenced in a logical manner by addressing how each discipline can contribute to the attainment of competencies that build upon one another. The DDS curriculum prepares students to:

- Integrate course theory with practice to enhance learning,
- Perform appropriate clinical care/community service as early as possible in the curriculum,
- Do more dentistry commensurate with ones knowledge and training, and
- Manage the comprehensive needs of a family of patients through the team approach.
- In addition, a community-based rural practice rotation is required during the senior year of the curriculum.

The School of Dentistry consists of the following academic programs:

- Doctor of Dental Surgery
- Graduate/Specialty Programs
- Dental Hygiene
- Research & Graduate Education

School of Medicine

Mission

The mission of the WVU school of Medicine is, “ To improve the health of West Virginians by educating health professionals; providing state of the art patient care; conducting basic science, clinical, translational and rural public health research; and by offering a variety of supportive health services to our residents.”

Academic Programs

The WVU School of Medicine consists of several academic programs and departments appealing to a diversity of interests. These include:

- MD Degree (Medical Students)
- MD/PhD Degree (Joint MD/PhD)
- Graduate Degree Programs (PhD, MD/PhD, MS)
 - PhD Degrees
 - Biomedical Sciences
 - Public Health Sciences
 - MS Degrees
 - Exercise Physiology
 - Occupational Therapy
 - School Health Education

- Professional Programs
 - Doctor of Physical Therapy
 - Master of Public Health
 - Master of Occupational Therapy
 - Master of Health Science/Pathologists' Assistant
- Graduate Medical Education (Medical Residents)
- Office of Medical Education
- Undergraduate Programs
 - Exercise Physiology
 - Clinical Laboratory Science
 - Histotechnology
- Research and Graduate Education
- Rural Medicine/Rural Health Training
- Continuing Education (Earn continuing education credits)
- Oman Medical College

Note: In addition to all the schools mentioned above at the HSC, recent legislative funding to create a School of Public Health has been secured for WVU and the HSC.

Facilities

The HSC is home to a host of core and shared research facilities listed below:

Institutional Resources

WVU and Health Sciences Center Core Facilities

WVU and the WVU HSC support research in many ways, including an on-site library and through support for core facilities. The Health Sciences Center Library exists on the second floor of the WVU HSC and is in close proximity to the investigators. The WVU HSC has an extensive library

collection with interlibrary loans available for free to all faculty and students. In addition, the basic and clinical science departments each have their own library of current journals pertinent to that department's interest, many of which supplement our WVU HSC library holdings.

Several very fine core facilities are also in place to support basic research, including a light and confocal microscopy facility, electron microscopy center, animal quarters, and transgenic facilities. In addition, each of the basic science departments in the WVU HSC have centralized common equipment rooms or shared facilities that are dedicated to supporting that department's research needs, such as databases, scintillation counters, super-speed and ultra-centrifuges with a variety of rotor-types, sonicators, FPLC, HPLC, mass spectrometry, airfuges, and other shared equipment, which can be used free of charge.

Each of the following core facilities are housed in the WVU HSC and are operated on a charge basis with a designated individual to run the day-to-day operations of these facilities. These facilities have both user and service options.

PROTEOMICS
AND MASS
SPECTROMETRY
CORE FACILITY

Micromass Maldi and Finnegan LC-MS (ion trap) mass spectrometers were purchased using an NCCR equipment grant (S10-RR16792- 01) and are available to perform high throughput and sensitive analysis of proteins. A BioRad 2-D gel separation apparatus was also donated to this facility (gift by Dr. John Barnett, Microbiology, Immunology & Cell Biology, and SOM). A Proteomics Facility was established using a COBRE grant. 900 ft of lab space has been renovated for this facility which exits on the second floor of the Health Sciences building, at the School of Medicine. A technician with mass spectrometry experience has been identified to manage the facility. The facility has gel apparatuses, needle pullers, small equipment, two computers with monitors, gel scanners, a robotic arm linked to software to the scanner for isolation of protein spots of interest, and a digestion system for elution and digestion by trypsin of protein spots of interest. Tryptic fragments can be introduced to the LC-MS ion trap mass spectrometer for identification of protein sequences. The mass spectrometer sends this information to the computer which searches databases to identify the protein of interest.

LIGHT AND
CONFOCAL
MICROSCOPY
CORE

This Image Analysis Facility is available to the West Virginia University research community. The facility provides access to advanced biomedical imaging technology including state-of-the-art light microscopy and quantitative software applications. The goal of this facility is to assist West Virginia University researchers in deriving quantitative data from a diverse range of image sources including electrophoresis, photomicrographs, transparencies, videotape, digital images, histological preparation, and *in vitro* specimens. In addition, the facility assists the researcher in incorporating images and data collected for use in grant applications, publications, and presentations. This facility has a Zeiss LSM 510 confocal microscope, an Optima Image analysis system, MicroBrightfield stereo investigator and neuroLucida, Codonics 1600 Dye sublimation printer, Fujix pictography 3000 color printer, Focus imaging ImageCorder slide maker, flatbed scanner with transparency adapter, Optonics MagnaFire microscope digital camera. MicroBrightfield NeuroLucida is advanced scientific software for performing brain mapping, neuron tracing, anatomical mapping, image analysis, and morphometry. NeuroLucida can be used with live images from color video cameras or with stored image sets from confocal microscopes, electron microscopes, and scanning tomographic sources. When used on light microscopes, NeuroLucida utilizes a computer controlled motorized XYZ stage for integrated navigation through tissue sections. This facility is available to users on a fee-for-use basis. Users also request support from grants for this facility.

ELECTRON
MICROSCOPY
FACILITY

A Health Sciences Center Core Electron Microscopy Facility provides complete scanning and transmission EM services on a fee-for-use basis. This well-equipped center is staffed fulltime and supervised by faculty from the Departments of Pathology and Anatomy. Investigators can obtain consultation regarding experimental design, as well as expert tissue preparation and ultra-thin sectioning services. One of the two microscopes is a recently purchased JEOL TEM, and both instruments are covered by manufacturer service contracts. The Core EM facility also offers complete darkroom services. The HSC Image Analysis Facility of the Department of Anatomy offers a comprehensive confocal imaging system (Zeiss LSM-510) and an integrated microscopy system for neuroanatomical 3-D reconstruction and design-based stereology (NeuroLucida and Stereo Investigator; MicroBrightfield, Inc.).

ANIMAL
QUARTERS
AND
TRANSGENIC
ANIMAL
FACILITY

The animal quarters is on the first floor of the WVU HSC and oversees the care of many different species of animals, including mice, rats, dogs, cats, reptiles, and chickens. In addition, the facility has two incubators for hatching eggs. West Virginia University School of Medicine was one of 41 recipients (out of a national total of 105 applicant medical schools) of a Biomedical Research Support Program from the Howard Hughes Medical Institute. Some of these funds are being used to construct a Transgenic Rodent Core Facility (TRCF) at its medical center. A relatively unique aspect of the program is the ability to generate transgenic mice and rats. Rats are often the species of choice in physiological studies, and the ability to provide transgenic animals represents a powerful research tool. The objective of the TRCF is to serve as a central molecular biology resource for the conception and execution of new projects and provide resources to help offset the high costs of developing transgenic animals. Architectural plans for this facility will be complete within a matter of days, and we expect the facility to be operational by mid-summer. The goal of the TRCF is to provide a facility that provides better quality control, turnaround time, and cost effectiveness than commercially available services. TRCF staff will be available for education, assistance, and consultation during all stages of transgenic animal development, and are responsible to implement new transgenic technologies, such as conditional gene deletion and temporal transgene expression. .

COMPUTATIONAL
CHEMISTRY AND
MOLECULAR
MODELING
RESEARCH
LABORATORY

The Computational Chemistry and Molecular Modeling Laboratory houses hardware and software; both local and remote access is available to the computational facilities. The Laboratory for Computational Chemistry and Molecular Modeling has three Silicon Graphics OCTANE computers. It is networked to an SGI Origin 2000 12 processor machine, and can access computers at remote locations including the NCSA. Access to remote locations is possible over the vBNS. The Laboratory has several software packages suitable for molecular modeling including SYBYL, CoMFA, Insight2000, Charmm, and AMBER. The Laboratory facilities can be used on-site or accessed remotely.

BIOINFORMATICS
AND
BIOSTATISTICS
FACILITY

This facility provides consulting services in bioinformatics and biostatistics to researchers throughout the University, as well as scientists in industry and government facilities. The principal areas of consulting are in microarray design and analysis, 2-D gel electrophoresis design and analysis, mass spectrometry data analysis, graphs and networks, biostatistics, programming support, high performance computing, sequence analysis and comparison, molecular dynamics, and database design and implementation.

MOLECULAR
MEDICINE
CORE

The Molecular Medicine Core (MMC) at the WVU Health Sciences Center offers a broad range of laboratory services in gene-based molecular medicine, as well as training and consultation. The Core provides treatment guidance for clinical trials. Other services include phenotype/genotype correlation and investigation of the significance of single nucleotide polymorphism (SNP) in disease susceptibility. The Core also helps WVU clinicians and investigators understand advanced molecular-genetics techniques and trains laboratory personnel at West Virginia University and at institutions elsewhere in the state.

The Molecular Medicine Core offers a full-service gene analysis program—including project, assay, and primer design—and experiments relating to genotyping analysis and gene expression assays. MMC services include sample preparation (fresh & paraffin-embedded tissues, blood, and all other types), DNA/RNA extraction, reverse transcription-polymerase chain reaction (RT-PCR), products purification, DNA sequencing, SNP, and pathogen detection for clinical research. The following techniques are utilized: RT-PCR, Real-Time Quantitative PCR with SYBR green dye or with TaqMan probe chemistry, CEQ SNP Primer Extension, TaqMan Allele Discrimination, and direct DNA sequencing. The Molecular Medicine Core houses state-of-the-art specialized equipment, including ABI 7500 Fast Real Time PCR System, CEQ 8000 Genetic Analysis System, ABI Prism DNA Sequencer, ABI Thermal Cyclers, and other equipment required for gene amplification, DNA sequencing, SNP, and pathogen detection.

ANIMAL
MODELS AND
IMAGING
CORE

The Animal Models and Imaging Facility (AMIF) has been established to accommodate the growing animal management needs of research laboratories and to provide state-of-the-art molecular imaging to West Virginia University researchers. Conveniently located within the OLAR Animal Facility in the WVU Health Sciences Center, the AMIF currently performs acute and longitudinal bioluminescence and fluorescence studies on mice.

XENOGEN
IVIS LUMINA
IMAGING
SYSTEM

The Xenogen IVIS Lumina Imaging System provides highly sensitive imaging of fluorescent and/or bioluminescent reporters both *in vivo* and *in vitro*. This system allows researchers to perform real-time *in vivo* imaging to monitor and record cellular and genetic activity within a mouse using fluorescent and/or bioluminescent reporters. Currently, this service is only available for mice, but they are hoping to expand their services to rats in the near future. In addition, this facility also offers additional services such as tissue collection, cryopreservation of sperm, various surgery, and mouse colony management assistance. The AMIF is a fee-for-service facility, overseen by a technician who is available for consultation and assistance with experimental design and data interpretation.

MICROSCOPIC
IMAGING
FACILITY

The Microscopic Imaging Facility (MIF) is located in the Health Sciences Center at West Virginia University. This facility provides access to advanced biomedical imaging technology including state-of-the-art light microscopes, as well as image analysis software packages. The Imaging Core Facility provides image acquisition and analysis services on a fee-per-use basis to the West Virginia University research and academic community. The facility provides individualized training for each user on the appropriate operation of the microscopes as well as downstream image analysis. The facility staff is available to help plan imaging experiments, ranging from advice on fluorophore selection to the development of new imaging routines such as Fluorescence Recovery after Photobleaching (FRAP) experiments or FRET for live cell experiments. The staff will collaborate more extensively with labs that have projects that are heavily dependent on

microscopy. The facility will assist researchers in preparing data and methodology for publications and grant applications. Resources in this facility include:

MIF NIKON
LIVE CELL

MIF Nikon Live Cell System supports fluorescent and DIC imaging in live cells. This is a Nikon TE2000S inverted epifluorescent microscope with Prior filter wheels and a high sensitivity, high-resolution Photometrics Coolsnap HQ CCD camera. It is controlled by the MetaMorph and MetaFluor software packages, which support high-end image analysis. This system can do multi-color time-lapse, CFP/YFP FRET and calcium ratio imaging. There is a Bioprotech dish heater and objective heater to maintain a constant temperature in the sample. A tissue culture incubator is available to support the cells until the acquisition begins.

MIF NIKON
SWEPT FIELD

The new Nikon Swept Field confocal system with three solid-state lasers (491, 561, and 638 nm) that is designed for high-speed confocal acquisition in live cells. This system uses a Photometrics QuantEM CCD camera with on-chip gain to maximize signal and to increase the rate of acquisition. This system is also equipped with a laser TIRF (total internal reflection fluorescence) illuminator which is able to achieve very high sensitivity and resolution with fluorescent molecules in the plasma membrane at the interface with the glass dish. This system is equipped with an epifluorescent illuminator and has filter wheels and shutters to support multi-color time-lapse acquisition. The Perfect Focus system maintains the focal plane during movies. Both the TIRF and epifluorescent images are captured with high-resolution Photometrics Cool-Snap CCD camera. This microscope setup is controlled by the Nikon Elements software package which also supports high-end image analysis. There is a Bioprotech dish heater, objective heater and perfusion chamber to maintain a constant temperature in the samples. A tissue culture incubator is available.

MIF OLYMPUS
HISTOLOGY

The MIF Olympus Histology System is an upright Olympus AZ70 epifluorescent/transmitted light microscope equipped with the MicroBrightField NeuroLucida and Stereo Investigator software packages. This system is used for color histology records, 3-D neuron reconstruction, serial section reconstruction, anatomical mapping, and morphometry analysis. It also has filter sets to capture blue, green, and red fluorescent images.

MIF ZEISS
CONFOCAL

Confocal microscopy is a technique that removes out-of-focus light from images to improve the resolution and clarity of images. The MIF Zeiss Confocal System is a Zeiss LSM 510 laser scanning confocal on a Zeiss Axio Observer inverted microscope. It has three lasers with four laser lines (488, 514, 543 and 633 nm). There are three PMTs for collecting fluorescent light, as well as a separate PMT for collecting a DIC image of the cells. This system uses the Zeiss LSM software which supports z-slices and 3-D rendering and colocalization analysis.

M I F Z E I S S
P A L M

The MIF Zeiss PALM is a Zeiss PALM MicroBeam system for non-contact microdissection of single cells or groups of cells. It uses a UV laser to cut around the sample of interest, and then a defocused burst of laser energy is used to catapult the sample into the cap of a microfuge tube. The isolated cells can then be used for DNA, RNA, or proteomic analysis. This system also has the capacity to collect cells under sterile conditions for further cultivation.

M I F Z E I S S
V I O L E T
C O N F O C A L

The MIF Zeiss Violet Confocal System is a new Zeiss LSM 510 laser scanning confocal on an upright Zeiss AxioImager microscope. It has four lasers with multiple laser lines (405, 458, 477, 488, 514, 543 and 633 nm). The violet laser on this system allows users to image additional fluorophores, including DAPI and quantum dots. There are three PMTs for collecting fluorescent light, as well as a separate PMT for collecting a DIC image of the cells. This system uses the Zeiss LSM software which supports z-slices and 3-D rendering, time-lapse acquisition, colocalization analysis, and FRAP experiments.

E L E C T R O N
M I C R O S C O P Y
F A C I L I T Y

A Health Sciences Center Core Electron Microscopy Facility provides complete scanning and transmission EM services on a fee-for-use basis. This well-equipped center is staffed fulltime and supervised by faculty from the Departments of Pathology and Anatomy. Investigators can obtain consultation regarding experimental design, as well as expert tissue preparation and ultra-thin sectioning services. One of the two microscopes is a recently purchased JEOL TEM, and both instruments are covered by manufacturer service contracts. The Core EM facility also offers complete darkroom services. The HSC Image Analysis facility of the Anatomy Department offers a comprehensive confocal imaging system (Zeiss LSM-510) and an integrated microscopy system for neuroanatomical 3-D reconstruction and design-based stereology (NeuroLucida and Stereo Investigator; MicroBrightfield, Inc.).

C E N T E R F O R
A D V A N C E D
I M A G I N G

The WVU Department of Radiology operates the Center for Advanced Imaging. The PET/CT facility uses a Siemens Medical Systems Biograph 16 PET/CT scanner and a Philips Medical Systems Gemini time-of-flight PET/CT scanner. Both systems are capable of quantitative whole body clinical imaging. In addition, the Center for Advanced Imaging houses a General Electric Medical Systems PETtrace cyclotron capable of producing the most common PET radionuclides (11C, 18F, 13N, and 15O). This facility also has the equipment for synthesis of a number of PET radiopharmaceuticals. The MRI facility operates five MRI scanners: a Siemens Medical Systems Vario 3T scanner, two Siemens Medical Systems 1.5T Avanto scanners, a General Electric Medical Systems 1.5T Twin Speed scanner, and a Philips Medical Systems 1T Panorama open MRI scanner.

C L I N I C A L
T R I A L S
R E S E A R C H
U N I T

The Clinical Trials Research Unit (CTRU) core facility is dedicated to providing services and expertise to the faculty and staff of the WVU HSC to support the clinical research enterprise, as it pertains to cancer. The goal is to provide access for cancer patients throughout the State of West Virginia to state-of-the-art clinical trials, develop new

anticancer therapies, and contribute to the clinical science of advancing therapeutics for the cancer patient. The CTRU is responsible for the registration of patients and/or participants and data acquisition for cancer protocols. The CTRU is part of the overall support for clinical trials research and is coordinated with the newly developed Protocol Review and Monitoring System (PRMS), and the Data Safety and Monitoring Plan (DSMP). The coordination functions of the CTRU have been developed and redeployed to reflect the coordination of activities with the WVU IRB and supporting clinical trials research at potential partner institutions as a formative statewide clinical trials network is emerging. The responsibility of the CTRU is to coordinate these activities, providing oversight for research nurse training, quality assurance and audit review, and developing policies and procedures for clinical trials activation, accrual, and management.

All patients enrolled in a clinical trial are registered with their demographic information and eligibility verification in the Cancer Center Velos eResearch database (Velos, Inc., Fremont, CA). For NCI-sponsored early phase studies, the CTRU submits data to the Clinical Trial Monitoring Systems (CTMS/ACES) for Phase I trials and to the Computer Data Update System (CDUS) for Phase II trials. All study coordinators and research nurses are trained in SAE identification and reporting per NCI guidelines and are familiar with NCI's Adverse Event Expedited Reporting System (AdEERS). For cooperative group and pharmaceutical protocols, the CTRU is responsible for the submission of the required data forms to the designated data center. Prior to protocol activation adverse event reporting (AERs) and clinical data reporting requirements are identified. A major element of the Data and Safety Monitoring Plan (DSMP) are the interactions of the CTRU research nurses with the Patient Protocol Review Committees, the Clinical Trials Disease Teams, and ultimately the Data Safety and Toxicity Committee (DSTC). The CTRU also reports to the NCI PDQ system about disseminating protocol information.

The CTRU occupies 1,400 sq ft of administrative space on the first floor in the Cancer Center. The director oversees a research administrative and support team comprised of clinical trials research nurses, data managers, regulatory specialist, accountant, network coordinator, database manager and secretary. The Cancer Center supports the certification of all qualified research staff to either the Society of Clinical Research Associates (SoCRA) or Association of Clinical Research Professionals (ACRP) as appropriate. The CTRU also provides important administrative and scientific direction to the protocol development process, Protocol Review and Monitoring Committee (PRMC), the Data Safety and Toxicity Committee (DSTC), and to NCI and other data reporting systems. The research program at the Cancer Center is in its earliest phase of substantive growth.

FLOW
CYTOMETRY
CORE
FACILITY

The Flow Cytometry Core Facility provides instrumentation and scientific support for cell analysis and cell sorting on a fee basis. The facility is equipped with two cytometers, a Becton-Dickenson FACSCalibur, and a FACSARIA along with a Miltenyi Biotec AutoMACS magnetic bead cell sorting system. The FACSARIA is a fifteen-parameter high-

speed bench top sorter capable of sorting cells into four separate populations. It has the capacity to sort into tubes or tissue culture plates and has both an aerosol management system for aseptic sorting and a temperature control option for maintaining the temperature of sorted samples. The FACSCalibur is equipped with an autoloader and has the capability of four-color analysis. The Flow Cytometry Core has several software packages including CellQuest Pro, ModfitLT, and BD Diva software for data acquisition and analysis. Services provided by this facility include analysis of cell surface phenotype, intracellular protein expression, cell cycle analysis, cytokine production, and cell sorting of eukaryotic cells. In addition, phenotypic analysis, quantitation, and sorting of prokaryotic cells are available. Also, Core staff is available for consultations on experimental design and data analysis.

GENOMICS
CORE
FACILITY

The Genomics Core Facility is operated by the WVU Department of Biology. The facility performs and runs sequencing reactions and fragment analysis on an ABI model 3130XL genetic analyzer. The Genomics Core Facility also has an AlphaImager UV/Vis image documentation system, an iQ5 real-time PCR system, a Li-Cor 4300L DNA analyzer, and a ND-1000 NanoDrop spectrophotometer available for self-service use.

PROTEIN
BIOCHEMISTRY
CORE
FACILITY

The Protein Biochemistry Core Facility provides instrumentation and scientific support for protein expression, purification, and analysis. The facility is equipped with a separate cell culture laboratory that contains all equipment required for work with Sf9 cells and baculovirus. A cold room and bench space are available for purification and analysis of proteins. The facility includes a Waters 650 advanced protein purification system, Pharmacia FPLC system, preparative and analytic scale columns, UV-Vis detector, fraction collector, and other assorted equipment for analysis and detection of proteins. Other major equipment includes a Biacore X100. In addition, Core staff members are available for consultations on experimental design and data analysis in all areas of protein activity and interaction assay.

LABORATORY
ANIMAL
RESOURCES

The primary WVU facility for maintaining animals for biomedical research and teaching is located at the WVU HSC. Designed to provide centralized procurement and care of animals, this facility consists of approximately 25,000 sq ft of animal holding and support space. The HSC facility can support a number of species, including rodents, rabbits, carnivores, small ruminants, swine, nonhuman primates, amphibians, reptiles, and fish. A surgical suite fully equipped for major survival surgeries is available, along with additional special support units including a radiology suite and a Cesium 137 small animal irradiator. Also, the facility has two incubators for hatching eggs.

TRANSGENIC
ANIMAL
FACILITY

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medical schools) of a Biomedical Research Support Program from the Howard Hughes Medical Institute. Some of these funds are being used to construct a transgenic rodent core facility (TRCF) at our medical center. A relatively unique aspect of the program is the ability to generate transgenic mice and rats. Rats are often the species of choice in physiological studies, and the ability to provide transgenic animals represents a powerful research tool. The objective of the TRCF is to serve as a central molecular biology resource for the conception and execution of new projects and provide resources to help offset the high costs of developing transgenic animals. Construction of the facility has been completed and staff is being hired. Our goal is to provide a facility that provides better quality control, turn-around time, and cost effectiveness than commercially available services. TRCF staff will be available for education, assistance, and consultation during all stages of transgenic animal development, and are responsible to implement new transgenic technologies, such as conditional gene deletion and temporal transgene expression.

BIOSPECIMEN
PROCESSING
CORE

The Pathology Department offers various services, including autopsy, surgical pathology, cytopathology, and neuropathology analysis. This group has a collection of paraffin-embedded tissues that can be accessed for immunohistochemical analysis. A centralized Histology Laboratory, which provides routine processing, sectioning, and staining of body tissues, as well as a wide variety of special stains and advanced immunohistochemical procedures are available on a fee-for-use basis. On-site technicians will section requested tissues and perform immunohistochemical labeling on a charge basis. Optionally, sections can be mounted on slides and the investigator may process immunohistochemical labeling. This section prepares 250,000 slides a year for pathologic examination. In the Cytopathology Laboratory, cellular morphology studies are performed on a variety of specimens, including gynecologic smears, body fluids, and fine needle aspirations. The Cytopathology Laboratory examines 8,000 gynecologic specimens and 2,500 non-gynecologic specimens annually. About 300 fine needle aspirations are performed each year.

TISSUE BANK
AND
RESEARCH
LABORATORY

Tissue-based research is increasingly contributing to the understanding of human disease, especially in genomics and proteomics based research. Tissue Banks make it possible to use human tissue in research. The West Virginia University Tissue Bank collects a wide variety of normal and diseased tissue from surgical resections and autopsies with Institutional Review Board approval and patient consent. Specimens are given to researchers without any patient identifying information. However, researchers may need to know basic demographic information which is collected and then deidentified (i.e. identifying information is removed) at the time of tissue banking. Approval from the Institutional Review Board and the Tissue Bank Board of Directors are required for all projects utilizing these tissues.

Skilled technologists work with surgeons, pathologists, and researchers to maximize the scientific value and quality of acquired tissue. They oversee designation of tissue so investigators can correlate pathologic features with their data while maintaining patient

confidentiality. Tissues are obtained fresh, frozen in liquid nitrogen, embedded in the cryopreservative O.C.T., and/or fixed in formalin and paraffin embedded. Histology services are also available. The WVU Tissue Bank operates with a research facility to provide slides, stain, or other technical assistance to the research community.

WV Nano Initiative

FABRICATION AND CLEAN ROOM

A key laboratory for the fabrication of electrical and photonic devices is the WVNano Fabrication and Clean Room. The suite of labs consists of 2,100 sq ft of clean space and accompanying support spaces. The clean space includes class 100, class 1,000, and two class 10,000 rooms. Equipped for standard fabrication equipment, the facility is capable of photolithography, wet chemical processing, metallization and deposition systems, reactive ion etching, and thermal processing. In addition to traditional photolithography, the facility is currently upgrading its fabrication capabilities with the purchase of a new 3EOL SEM and JC Nabity software for e-beam lithography. The facilities are available to all on a fee-for-use basis, which includes training from experienced staff.

WVNANO ADVANCED CHARACTERIZATION FACILITY

Shared facilities are available to all on a fee-for-use basis, which includes training from experienced staff. Equipment and expertise are available for the following measurements: x-ray photoemission spectroscopy, x-ray diffraction, scanning probe microscopy, scanning electron microscopy, photoluminescence spectroscopy, fluorescence spectroscopy, Raman microscopy, transmission electron microscopy, and temperature-dependent magnetotransport measurements.

National Institute for Occupational Safety and Health (NIOSH) Facilities

In addition to the aforementioned core research facilities that are available through WVU, the following core facilities are available through the Centers for Disease Control/National Institute for Occupational Safety and Health (CDC/NIOSH) located adjacent to the WVU HSC campus. WVU and NIOSH scientists have a long and rich history of collaborations, with WVU researchers gaining access to NIOSH facilities through guest privileges, a common arrangement.

INHALATION FACILITY

The Inhalation Facility at NIOSH designs, fabricates, and tests particle and vapor generation systems. The facility is supported by 12 engineers, aerosol scientists and lab technicians. The group is experienced with exposing lab animals to silica, fine, or nano TiO₂, multi-walled carbon nanotubes, cotton dust, agricultural dusts, endotoxin, -glucans, O₃, TDI, welding fume, and artificial butter flavoring.

HISTOLOGY/
MICROSCOPY
/PATHOLOGY
FACILITY

The Histology/Microscopy/Pathology Facility is a facility located at NIOSH that is equipped with the following: light and fluorescent microscopes with image analysis; confocal microscopes for 3D, with multi-color imaging; transmission and scanning electron microscope with EDX particle analysis capability; field emission scanning electron microscope for high-resolution images; and Cyto Viva microscope for high resolution spectral analysis of unfixed tissue. In addition, instrumentation is available for slide preparation and immunohistochemistry. The facility is staffed by two histotechs, two light and electron microscopists, and a board-certified veterinary pathologist.

ELECTRON
SPIN
RESONANCE
FACILITY

The Electron Spin Resonance Facility at NIOSH is equipped with ESR spectrometers to identify and quantify the generation of reactive oxidant species in particles, particle-exposed cells, or exposed mice. These measurements have been conducted after exposure to metals, silica, fine and nano-TiO₂, carbon nanotubes, wood smoke, coal dust, nano AG, Cu, or Au.

CELL
CULTURE AND
MOLECULAR
BIOLOGY
FACILITY

The Cell Culture and Molecular Biology Facility at NIOSH routinely performs the following types of measurements and procedures: isolation and separation of lung cells from control or exposed laboratory animals; cell culture; measurement of reactive species, inflammatory mediators, growth factors, and fibrogenic factors; measurement of oxidant stress, cytotoxicity, and genotoxicity; identification of molecular signaling pathways controlling mediator production and cell proliferation; measurement of nitric oxide and tight junctions in endothelial cells; monocyte contractility in cardiac cells.

TISSUE FACILITY
FOR
CARDIOVASCULAR
TOXICOLOGY

Expert scientists reside at NIOSH for tail artery measurements of vascular resistance and responsiveness to vasodilators. Also, measurements are routinely made in cardiac arterioles in response to dilators.

ANIMAL
QUARTERS
AND IN VIVO
STUDIES

NIOSH has an AAALAC-accredited animal facility. Its staff is experienced with exposure of laboratory animals to occupational agents by intratracheal instillation, pharyngeal aspiration, or inhalation. The following pulmonary endpoints are routinely measured: inflammation, lung damage, oxidant stress, fibrosis, airway resistance and hyperreactivity, tumor formation, and susceptibility to infection. The staff also has expertise in identifying biomarkers or gene signatures of disease initiation and progression. The following cardiovascular endpoints are routinely measured: systemic microvascular function in response to dilators; cardiac function – blood pressure, cardiac output, heart rate variability, end systolic and diastolic pressure; bloodborne mediators – inflammatory mediators and clotting factors; central nervous system signals – activation of pulmonary sensory receptors; and induction of inflammatory or damage signals in specific regions of the brain.

Collectively, the institutional core resources available through WVU and NIOSH provide a rich biomedical research environment. These existing resources will continue to be utilized by investigators affiliated with the Center for Drug Discovery and Therapeutics. In addition, new shared resources are proposed as part of this COBRE application to further expand our capacity into the drug discovery space.

More about these and other shared or core facilities may be found at:

<http://www.hsc.wvu.edu/ResOff/Research/SharedResearchFacilities.aspx>

The Grants/Funding Process

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Introduction

The grants/sponsored funding process involves those procedures and practices relating to both the procurement and management of sponsored funds derived as a result of financial awards provided by a funding entity. This sponsored funding is intended to carry out a stated purpose. The pre-award part of the grants/sponsored funding process can be thought of as all those practices surrounding the acquisition of extramural funding and the post-award component of the process relates to the management of projects once the award funding is received by a funding entity (see Figure 1).

The Grants Process

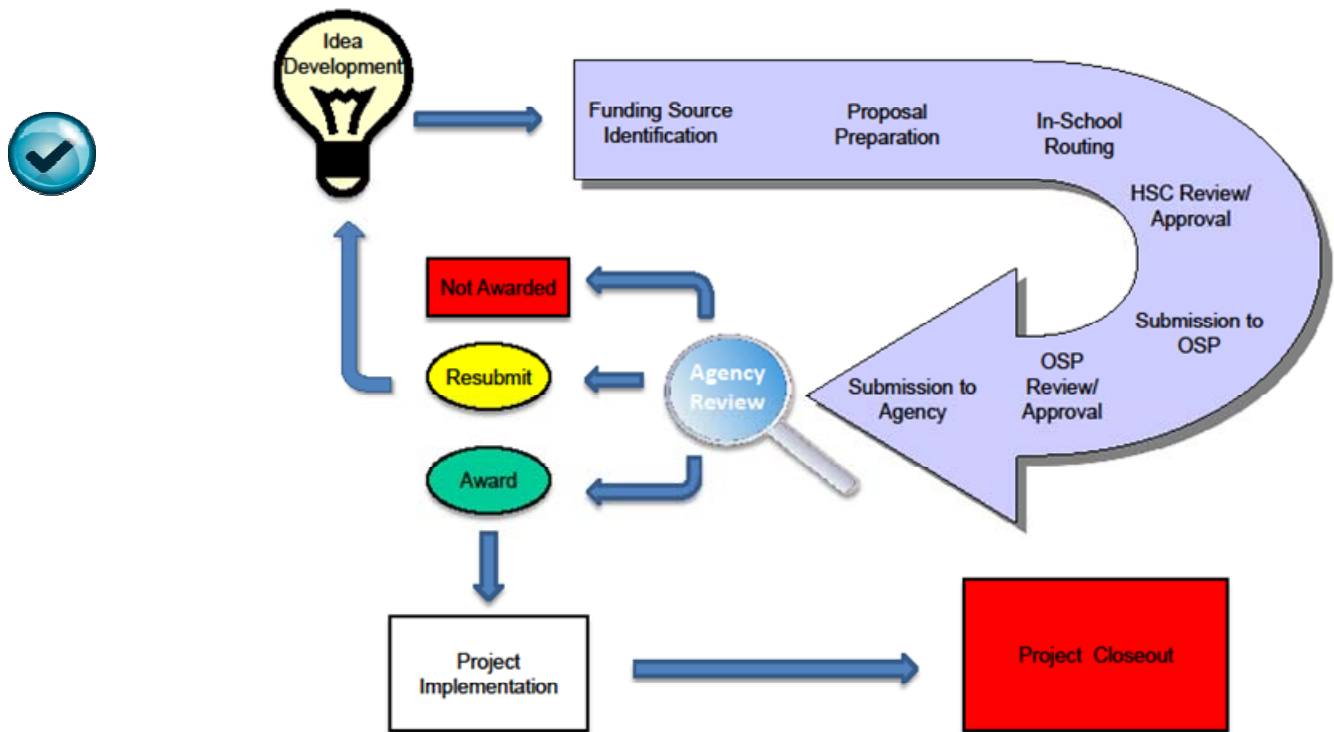


Figure 1: Generic grants/sponsored funding process

Pre-Award

The Pre-Award phase of the sponsored funding process refers to all activities involved in the preparation and submission of a proposal to a funding entity. Activities performed by either an individual or a research team include:

- Idea development
- Funding source identification
- Proposal preparation
- Routing, review, and submission

Idea Development

The grants/sponsored funding process (see Figure 1) starts out with an idea that you, as a researcher, think merits funding. You may wish to speak with colleagues, mentor(s), department chairs, or others about your idea to help you develop them. If you want to pursue NIH funding and if you have a reasonably clear idea about what NIH Institute you think your idea might best relate to your idea, the NIH recommends contacting an appropriate program officer who can provide additional feedback about the merits of your idea. You'll also want to determine if your organization has the facilities and other types of infrastructure in place to support the implementation of your idea. If you don't have these resources, you will need to determine if you have access to these resources through partnerships.

Funding Source Identification

Preparation of a competitive application for funding requires a significant investment of time. Success depends not only on the PI's experience and a great idea, but also on available funding opportunities, the appropriateness of the idea for a particular funding opportunity, and the availability of necessary resources and preliminary data to support and successfully implement it. In this section, we discuss how to assess a PI's readiness for applying for grants, how to identify suitable funding sources for projects-both internal and external to WVU. We will then look at how WVU departments and individuals can help SoP researchers achieve these goals.

DO YOUR HOMEWORK

For the SoP, sources of research and extramural funding can range from several federal agencies and programs, such as the National Science Foundation (NSF), the National Institutes of Health (NIH), to smaller institutes and private foundations. Also, when developing your idea, it can be useful to look at the types of projects and the size of grants these organizations have supported in the past. Using the resources discussed in this section, researchers can collect important information from the websites reviewed or through contacting the appropriate organization contact. This background research is essential for preparing the best proposal for identifying the most appropriate source of funding.

Information obtained about current and past awards can be essential for preparing a PI's application. Information retrieved will include items like:

- Name and affiliation of principal investigators
- Title of project
- Abstract
- Project period
- Amount of award
- Funding Program (Funding Opportunity Announcement [FOA] for NIH grants)
- Program officer or contact

DETERMINE IF YOUR RESOURCES ARE ADEQUATE

When reviewing an application, a funding agency not only looks for a great idea, but they also want evidence of a PI's experience in managing the implementation of a project. For

TO RESEARCH WHAT'S BEEN AWARDED:

NSF:

<http://www.nsf.gov/awardsearch/>

NIH:

<http://projectreporter.nih.gov/reporter.cfm>

(Formerly CRISP Database)

example, sometimes a sponsor requires evidence of appropriate facilities and resources available at the SoP or HSC. This would include items such as lab space and other necessary infrastructure. Resources may also be intangible, such as the demonstration of a positive intellectual environment. Many grants may also ask for preliminary data unless the opportunity specifically targets new or preliminary research. This is usually made clear in the call for proposals—also called Funding Opportunity Announcements (FOA). However, note that although a particular funding opportunity may not require preliminary data for submission, the project may be unlikely to be funded without it—hence, the importance of doing your homework regarding the funding history for the opportunity to which you are preparing a proposal. The researcher must also assess the amount of time available to himself/herself, as well as that of those who will work on the project.

Preparing a highly competitive proposal may take several months.

AVAILABLE RESOURCES TO GET STARTED

Experienced researchers are aware of the myriad of capacity-building and funding resources available. These include **federal, state, University, and foundation** and **industry** sources. Overlaying these sources are funding opportunities that target special audiences like **new investigators, student awards, fellowship** and **scholar awards**, and other miscellaneous awards like **equipment, training, and program awards**. In this section, we will introduce and enumerate some of these sources to provide the reader with a feel for sources to search available funding. To assist both the new and experienced researcher, a variety of resources are available through training and technical assistance to build their capacity to obtain and manage extramural funding. In the “Resources” section of this document, more information about specific award opportunities is provided. When you have questions about funding, feel free contact the Associate Dean for Research and Graduate Programs or your Grants Administrator for assistance.



Training and Technical Assistance

The Office of Research and Graduate Programs at the SoP provides occasional training workshops and continued technical assistance to PIs. The purpose of training provided is to build the PI and support-staff capacity to better prepare to respond to funding announcements and properly manage the project once awarded.

Additionally, the WVU OSP provides a myriad of resources and services including training, required forms to complete, templates to assist your completion of forms electronic Web access to internal and external funding, policies, and other pre-and post-award support, and occasional grants news and funding alerts.

Using Electronic Resources

Many grant opportunities are announced through web-based search systems such as grants.gov or InfoEd. This is especially true for those grants supported by the Federal government. This section provides information about some of the databases, tools and sites, and contact services available to researchers.

Online Resources

Faculty can access several databases from their office computers; these databases provide information about potential collaborators as well as funding opportunities. Links to these sources can be found on the WVU OSP website or can be accessed directly from the following URLs:

Federal

FEDBIZOPPS

<https://www.fbo.gov/>

Search, monitor, and retrieve opportunities solicited by the entire Federal contracting community.

FEDERAL
REGISTER

<http://www.gpoaccess.gov/fr/>

The Federal Register is the official daily publication for rules, proposed rules, and notices of Federal agencies and organizations, as well as executive orders.

GRANTS.GOV

<http://www.grants.gov/>

Grants.gov provides a unified site for interaction between *grant* applicants and the US Federal agencies that manage *grant* funds.

NATIONAL
INSTITUTES
OF HEALTH
(NIH)

<http://grants.nih.gov/grants/guide/index.html>

This site allows for a search using keywords or announcement numbers. In addition, one may search all active Requests for Applications (RFAs), Program Announcements (PAs), and Parent Announcements.

NATIONAL
SCIENCE
FOUNDATION
(NSF)

<http://www.nsf.gov/funding/index.jsp>

View all open funding opportunities for NSF. NSF funds research and education in most fields of science and engineering.

Foundation

FOUNDATION
CENTER

<http://foundationcenter.org/>

The Foundation Finder, a feature available at the Foundation Center website, offers basic information on grantmakers in the United States including private foundations, community foundations, grantmaking public charities, and corporate giving programs.

Miscellaneous Sources

GRANTSNET

<http://sciencecareers.sciencemag.org/funding>

Funding opportunities for the sciences, supported by *Science* magazine.

SPIN WWW

http://spin2000.infoed.org/new_spin/spinmain.asp

The “SPIN WWW” database is an additional and extensive source of information on funding. SPIN database searches can be customized (e.g., by applicant type, field, type of award, etc.). Individuals can access SPIN online through the “InfoOffice,” a link found on the InfoEd website. Note: SPIN services are restricted to subscribers; for this reason, individuals must use a campus computer.

E-mail Funding Alerts

E-mail alert services allow the researcher to subscribe to regularly distributed and automated listings of current funding opportunities by funding agencies. Some of these sites also have searchable databases. Some funding alert mechanisms allow the researcher to limit the search to selected criteria related to research areas and programs. Examples of these alerts include:

Federal

NATIONAL SCIENCE FOUNDATION UPDATE

<http://www.nsf.gov/my NSF/>

NSF provides this free notification service to push new content posted on the NSF website. Notification can be received via e-mail or RSS.

NIH NATIONAL INSTITUTES OF HEALTH LISTSERV

<http://grants.nih.gov/grants/guide/listserv.htm>

The NIH transmits an e-mail with table of contents information for its weekly issue of the NIH Guide via the NIH LISTSERV. The table of contents includes a link to the Current NIH Guide Weekly Publication as well as links to each NIH Guide RFA, PA, and Notice published.

Miscellaneous Sources

FOUNDATION CENTER

<http://foundationcenter.org/newsletters/>

Users can subscribe to a number of free newsletters and bulletins about current and upcoming proposal announcements.

GRANTSNET

http://www.grantsnet.org/funding_news_alert.cfm

GrantsNet is a one-stop resource to find funds for training in the sciences and undergraduate science education. Through the support of The Howard Hughes Medical Institute (HHMI) and The American Association for the Advancement of Science, (AAAS,) this service is completely free.

Proposal Preparation

After a researcher has identified at least one potential funding source, they begin a series of tasks including the formation of a research team (if needed) and further refining the research idea. In this section, we discuss the process of writing and preparing a proposal and identify available resources WVU, HSC and the SoP has in place for the various steps in the proposal development and submission process.

Proposals are submitted in a variety of ways, therefore, PIs must pay careful attention to the submission requirements of a particular funding opportunity. Remember though, whether your proposal is directed to a government, foundation, industry, or other potential funder, the PI must ensure there is sufficient time for the actual agency submission process. In the subsequent section, we will review the requirements and activities surrounding proposal submission to an agency in greater depth.

Most funding agencies issue forms of proposal solicitations called Request For Applications (RFAs), Program Announcements (PAs), Requests For Proposals (RFPs), or Funding Opportunities Announcements (FOAs). Whatever term is used, the solicitation is a researcher's point of reference to navigate successfully through the entire proposal development process. Most solicitations include a variety of items for the PI to review such as:

- Goals and objectives of the agency
- Scope of the project
- General and specific topics to be addressed
- Budget requirements
- Outcomes
- Eligibility requirements
- Timelines and deadlines
- Review criteria

Reading a program solicitation for the first time can be daunting. However, these elements must typically be addressed in the proposal in order to justify agency review of a proposal and may be rejected by agencies even before they are evaluated on the basis of not following the solicitation requirements. If you get nothing else out of this section know that experienced and successful researchers will tell you, “**READ THE ENTIRE ANNOUNCEMENT THOROUGHLY AND COMPLETELY MORE THAN ONCE,**” at a minimum before you begin preparing your proposal, and as you are completing the proposal to ensure that all of the elements are addressed.

If something in the solicitation is unclear, a researcher can communicate with an agency program officer, a mentor, the SoP Grants Administrator, or the Associate Dean for Research and Graduate Programs. In addition, some solicitations may require a preliminary proposal prior to the full proposal. Agencies may review these to reduce the number of applications eligible to submit full proposals. Researchers follow a process similar to that of preparing a full proposal. Timely planning, especially creating content outlines using the solicitation as a guide for writing, will minimize your stress and headaches.

One final note, as a prospective PI, you will be required to take WVU training related to research. Basic compliance training related to the use of animals and/or human subjects in research will be required before OSP will sign off on your first proposal. Please consult the following web site for more information:

<http://oric.research.wvu.edu/>

PROPOSAL TYPES

Funding
Competition types

Preliminary Proposal



A preliminary proposal can be thought of an expanded abstract. Some funding programs require these in advance of the full proposal submission. The pre-proposal does not include a detailed budget and justification required of formal proposal. However, some may include an estimated budget. It also does not require other components normally required for full proposals. If you are submitting a preliminary or pre-proposal, contact your Grants Administrator or OSP to see how you should proceed.

New

New project that must compete with other proposals.

Renewal

Previously funded project that must now compete with other proposals in order to be re-funded.

Non-competing
Renewal
(Continuation)

An established project that, at the time of original funding, listed one or more additional years of recommended support. Applications for these additional years must be submitted to the agency, but they do not compete with other proposals and usually are not reviewed outside the agency.

Revision	When a PI submits a proposal to a sponsor and the sponsor requests that the PI make changes and send it again, the second version of their proposal is a revision.
Supplement	Supplemental proposals are a request to a funding entity for additional support to ensure the original scope of work can be done adequately.
Function Types	
Research	Most WVU projects involve basic research that fits within the mission of the funding agency. However applied, demonstration, and clinical research are also performed.
Training	A training project involves training students in a special manner or for a specific purpose that is approved by the funding agency.
Fellowships	A fellowship is support for an individual, usually a graduate professional student, postdoctoral research associate, or faculty member selected by the funding agency.
Public Service	These are projects related to research or instructional activities that benefit a community outside West Virginia University.

AWARD TYPES

The term “award” has been used generally throughout this document. However, sponsored awards will take different forms, that is, funding agencies provide award dollars through many different mechanisms. The most typical award types are grants, contracts, and cooperative agreements. Your Funding Announcement will typically tell you what type of award you will be pursuing.

Grants	The principal purpose of the relationship is the transfer of funds to accomplish a stated purpose. Typically, there is no substantial involvement between the grantor and the grantee.
Cooperative Agreement	The principal purpose of the relationship is the transfer of funds to accomplish a public purpose. Unlike a grant, there is substantial involvement between the grantor and the grantee. Although the granting agency is involved, it is less than a contract.
Contracts	This is a legal tool in which the contractor performs a designated task or service at the direction of the funding agency. It may be solicited [under a Request for Proposal (RFP)] or unsolicited. It may be in the form of a purchase order or letter agreement. The principal purpose for an entity providing funds via contracts is to accomplish the acquisition of property or service by a funding entity.

Proposal Routing, Review, and Submission

PROPOSAL SUBMISSION TO A FUNDING AGENCY

Whether your proposal is directed to a government, foundation, industry, or other entity, proposals are submitted to a funding agency in a variety of ways, the most common being electronically. For example, many federal agencies currently use Grants.gov. Within the federal government and the NIH, the Electronic system used for submitting and managing research funding is eRA Commons.

eRA Commons

Developed, managed, and supported by NIH's Office of Extramural Research, the eRA systems provide information technology solutions and support for the full life cycle of grants administration functions for the NIH as well as the Agency for Healthcare Research and Quality (AHRQ), Centers for Disease Control and Prevention (CDC), Food and Drug Administration (FDA), the Substance Abuse and Mental Health Services Administration (SAMSHA), and the Veterans Health Administration (VHA).

eRA offers vital solutions to manage the receipt, processing, review, award, and monitoring of over \$30 billion in research and non-research grants awarded annually by NIH and other grantor agencies in support of the collective mission of improving human health. Used by Federal staff and applicants at over 9,500 institutions worldwide, eRA is working to eliminate the hundreds of millions of pieces of paper previously required to:

- Record, review, and process over 80,000 applications each year
- Support more than 3,500 review meetings held annually
- Administer more than 55,000 awarded competing and non-competing grants
- Maintain patent and invention records for 25 Federal agencies
- Support thousands of applicant interactions with the Federal Government before and after the grant award, through the eRA online interface

eRA's focus is on supporting the mission of serviced agencies by providing tools to electronically manage and report on grants in a way that:

- Maximizes efficiencies
- Provides a strong and scalable infrastructure
- Is responsive to evolving customer needs
- Employs sound management controls

eRA systems align with Grants.gov (the one-stop Web portal for finding and applying for federal grants), allowing for full electronic processing of grant applications from application submission through closeout of the grant award.

In general, researchers must pay careful attention to the submission requirements of a particular funding opportunity *and* follow internal deadlines and other instructions to ensure there is sufficient time for the actual agency submission process. Some submission sites require several weeks for accounts to be established. In some cases, both paper and electronic submissions are

required. Departmental staff support, the grants administrator, and the WVU OSP will assist the PI if needed.

THE BLUE SHEET

Once a PI reads the funding announcement thoroughly and embarks on the path of proposal development and submission, a series of information requirements are necessary for both the funding agency and WVU. As noted above, the funding agency provides the PI with a slate of information requirements to assist the PI in preparing a completed proposal package. In the same way, WVU requires a form to be completed as well; it is the *West Virginia University and WVU Research Corporation Sponsored Programs Application Approval Sheet* (Blue Sheet). Information on the Blue Sheet, now in an electronic format, also asks the PI to provide information about themselves and other key people involved in the project, the prospective funding entity, the proposed budget, project title, and the length of time proposed to perform the project.

The Blue Sheet also requests information about departmental/school financial contacts and provides space for departmental and school approval signatures. Specifically, the Blue sheet provides WVU OSP with a summary of information about the proposal which pertains to a variety of compliance issues including:

- Name of proposed funding agency
- Proposal budget amount
- Protection of human subjects
- Appropriate use of animals in research and teaching
- Appropriate handling of radioactive, hazardous, and toxic materials and wastes
- Bio-safety
- Conflict of interest
- Export controls
- Integrity in research



Click here for more
information

Recently, the Offices of Sponsored Programs (OSP) and Information Technology (OIT) collaborated to implement a full service Electronic Research Administration (ERA) solution that you will be hearing more about in the coming months.

In the short term and as of the writing of this handbook, they have established a temporary “stop-gap” electronic Sponsored Programs Application Approval Sheet (Blue Sheet or Electronic Blue Sheet [EBS]) and have implemented a paperless routing and approval process for proposal documents submitted with the blue sheet to the Office of Sponsored Programs. The WVU OSP believes that the processes developed and knowledge gained from the research community during this development project provides a better understanding of the complex requirements of an eventual full-service Electronic Research Administration (ERA) system, while providing some relief for the current staff and paper- intensive proposal submission process.

The development team seeks input from the WVU research community as this project evolves as it seeks to reduce the time and effort required to gather the necessary signatures and deliver all documents to the Office of Sponsored Programs. As of January 1, 2011, unless otherwise noted, all proposals submitted through to OSP require the PI to use this temporary stop-gap EBS.

If you are a prospective PI and decide to pursue a funding opportunity it is suggested that you contact your Grants Administrator or WVU OIT at 304-293-4444 or <https://ebs.wvu.edu/pls/roadprod/f?p=EBS:HOME> to establish an EBS account. Make sure you have your MasterID Username and Password ready.

SOP EBS Approval Hierarchy

	<u>Primary Signatory</u>	<u>Alternate Signatory</u> (Only in the event that it is not possible to contact the primary signatory for their email signature)
Dean's Office	Patricia Chase	Rae Matsumoto, Mary Stamatakis
Basic Pharmaceutical Sciences	Peter Gannett	Yon Rojanasakul, Rae Matsumoto
Clinical Pharmacy	Terry Schwinghammer	
Pharmaceutical Systems & Policy	Suresh Madhavan	
HSC Approval Hierarchy	Valerie Lemasters	
OSP Approval Hierarchy	To be assigned by Janet Boyles	
Electronic Blue Sheet (EBS) System Login:	https://ebs.wvu.edu/pls/roadprod/f?p=EBS:HOME	

Note: If your proposal includes partners from other schools or colleges within WVU, they must also provide approval signatures as outlined in their designated approval chain

PROPOSAL PREPARATION RESPONSIBILITIES WITHIN THE SCHOOL OF PHARMACY

In the proposal preparation process, it is important to delineate roles and responsibilities to properly navigate the proposal through to submission. This section will identify who is responsible for what proposal development activity.

Principal Investigator
(and, if available,
departmental support)

The Principal Investigator (PI) assumes the primary leadership role of a project. The PI is officially designated on the Blue Sheet. Early on, PIs are encouraged to discuss their proposal idea(s) with their Chairs, mentors, the Associate Dean for Research and Graduate Programs, the SoP Grants Administrator, appropriate pre-award officials at the WVU OSP, and an Agency program contact. In the proposal development stage, the PI must:

- Read and understand the Funding Announcement Requirements
- Prepare technical/scientific proposal
- Prepare budget and justification
- Prepare other required documentation
- Obtain internal approvals

Department Chair

The Department Chair is responsible for all research or sponsored activities conducted in their Department. The proposal package must be approved by the Chair prior to its submission to HSC. The signature of the Department Chair on the Blue Sheet:

- Affirms that the research or sponsored activity is in line with both the long and short-range plans of the Department
- Confirms that the applicant within their department is eligible to be a PI or Co-PI at WVU
- Affirms that the PI or Co-PI has the knowledge, skills, time, and ability to complete the activities enumerated in the proposal
- Is committed to provide any specific requirements if the proposal is funded, including cost sharing commitments and assures that these requirements will be in place prior to the award
- Can accommodate the PI's needs in order to conduct the activities with things like adequate space, materials, staffing, cost sharing commitments, and any hazards associated with the conduct of the sponsored activity
- Will manage any potential conflict(s) of interest
- If the PI is unwilling or unable to complete the project, the Chair will ensure that the project is successfully completed or appropriately closed out

Dean

The SoP Dean is responsible for the research and other sponsored activities conducted at the School. This includes reviewing, approving, and signing the Blue Sheet. When signing the Blue Sheet, the Dean:

- Confirms the research or sponsored project is within the University's mission and in the best interest of the University
- Acknowledges that the research or sponsored activity conforms to both the long and short range plans of the SoP
- Verifies to the appropriateness of the activity
- Attests that the Dean is aware of the faculty member's needs in order to conduct the activities (e.g. space requirements, equipment, supplies and materials, staffing, and matching funds) and any potential hazards or other issues associated with the conduct of the proposed sponsored activity
- Affirms commitment to provide any specific requirements or resources (e.g. matching funds) should the proposal be funded

Figure 2 represents the routing and review process within the SoP, to the HSC, and finally to the WVU OSP.

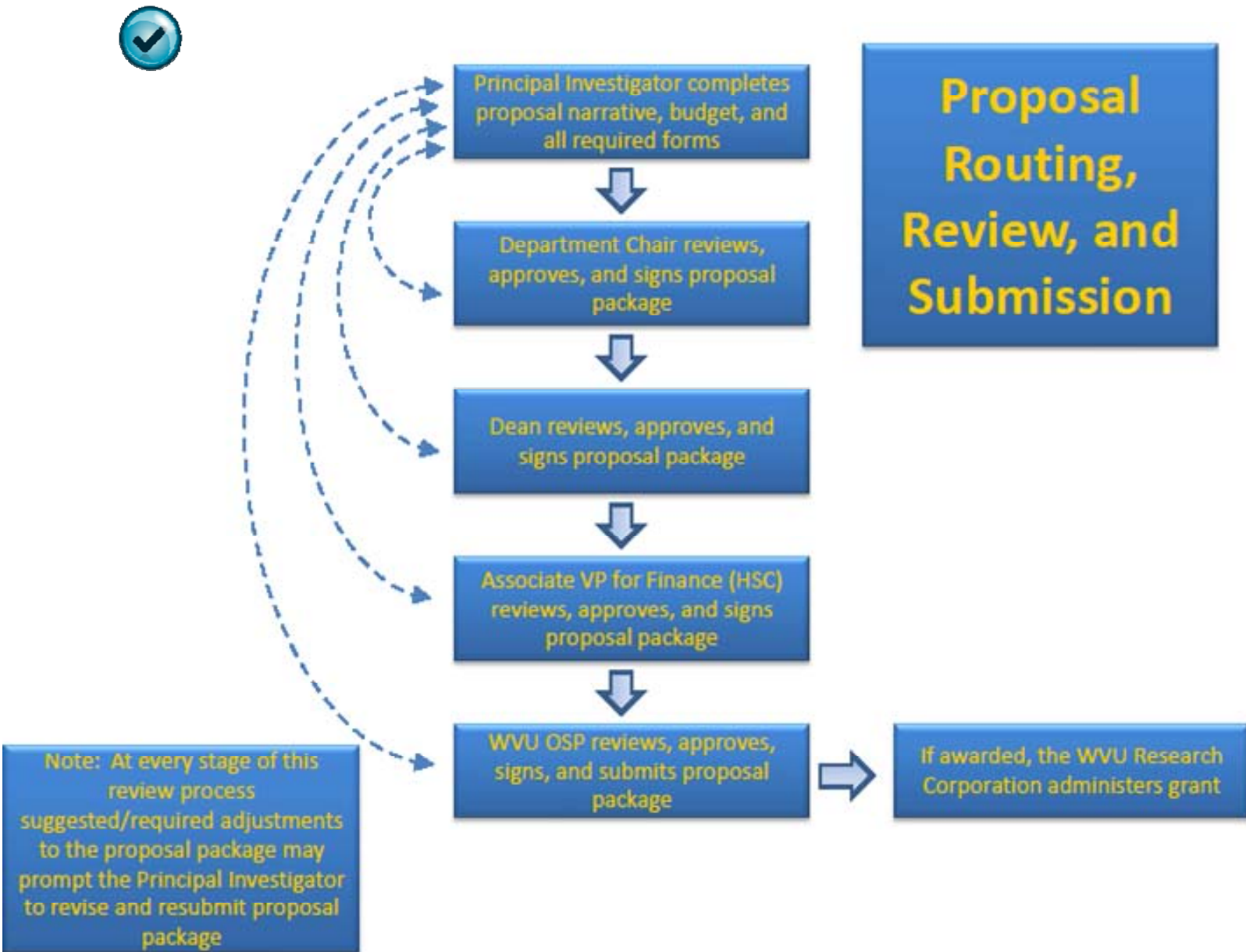


Figure 2: Steps in routing, review, and submission of the proposal



WHAT HAPPENS AT EACH STEP OF THE INTERNAL PROPOSAL SUBMISSION PROCESS

Principal Investigator completes proposal narrative, budget, and all required forms



Department Chair reviews, approves, and signs proposal package



- The PI submits the materials via Electronic Blue Sheet to the department chair for signature. Note: to expedite your proposal through the EBS approval process, Valerie Lemasters at the Office of the Associate Vice President for Finance at the HSC is the last approver at HSC and can conduct a cursory review of your proposal package at your request. She will alert you to items in your proposal that will not pass her official review. This is important because once you formally initiate the review and approval process and a reviewer denies approval for any reason, you must start the entire approval process from the beginning.
- If there are Co-investigators from different departments, their chairs must also sign the proposal.
- The PI may request that the Grants Administrator review their proposal package at least two days in advance of HSC deadlines.

Dean reviews, approves, and signs proposal package



- The PI may submit a proposal via the EBS to the SoP Dean for signature provided the following items are complete and final:
 - Budget
 - Cost share requests
 - Consortium letters
 - Project narrative (draft is acceptable)
 - Electronic Blue Sheet which includes required signatures



Associate VP for Finance (HSC)
reviews, approves, and signs
proposal package



- Only the proposal Research Plan (narrative) may still be in a draft stage
- Submit two complete sets of your completed proposal (if hard copy is required) to the Associate Vice President for Finance at the HSC
- Allow up to three full working days to complete their review process

WVU OSP reviews, approves,
signs, and submits proposal
package



- Final form (no drafts)
- Provide OSP with an electronic copy and signed Blue Sheet
- WVU OSP requires five full working days for Review
- Note: Fully electronic process beginning in 2011

AGENCY REVIEW

After the proposal is submitted, the potential sponsor may acknowledge receipt of the proposal by providing to the OSP an acknowledgment or assignment number. All further correspondence with the sponsor should refer to that assignment number. In most cases, it takes six to nine months from the time a proposal is submitted to an agency to the notification of an award.

The proposed investigator should contact the WVU OSP before he or she agrees to any modifications of the project recommended by the funding agency. In fact, the PI should ensure that all agency questions or concerns be routed to the PI through a WVU OSP contact. If a revised budget must be submitted after negotiation, it must be approved by the WVU OSP, which negotiates the terms and conditions of awards. Also, if you wish to view a video on peer review at the NIH, please go to:

<http://www.youtube.com/watch?v=kfgzdLe92c0>

Post-Award

Once WVU OSP and the researcher are notified by a funding agency that they will receive an award, the next phase of the grant process begins—that of administering the award. At this point, it is important to revisit the sponsored project and what it is. A sponsored project is awarded to the University by external sources in support of research, instruction, training, testing, service, or other scholarly activities under an agreement where the following conditions apply to the proposal/project:

- Requires institutional endorsement (through OSP)
- Obligates the PI to plan their work and work their plan in accordance with the funding agency requirements
- Establishes an understanding of how funds will be used or includes a line item budget that identifies expenses by activity, function, or project period
- Requires fiscal accountability as evidenced by the submission of financial reports to the sponsor, an audit provision (if required), or the return of unexpended funds at the end of a project
- Obligates the PI to report project results or convey rights to tangible (i.e. equipment, reports, etc.) or intangible properties (i.e. data, copyright, or inventions) resulting from the project
- Requires considerations such as indemnification or imposes other terms of legal accountability

Sometimes called **award initiation and management**, the post-award phase of the grants process are those activities surrounding your grant from the actual receipt of award funds from a funding entity through to the closeout of your project. As noted above, this includes successfully managing all post-award activities to ensure proper spending, reporting, invoicing, maintenance, and closeout of awarded grants. As with the pre-award phase of your proposal you can rely on the WVU OSP, the SoP Office of Research and Graduate Programs, and your Grants Administrator to assist you when needed to successfully manage your award through to closeout. This section focuses on the more important aspects of managing awards—including department staff and SoP business office (monthly budget reports, personnel, etc.)

Managing Your Project

AWARD RECEIPT AND ACCEPTANCE

A PI submits a proposal to be awarded through WVU OSP who then negotiates and approves all contracts and agreements for sponsored research. In addition, it must be kept in mind that if/when an agency makes an award decision for that proposal, the award is directed to the WVU OSP and not the PI. The WVU OSP assists in the University's review of sponsored program funds to ensure they are expended in accordance with sponsor/federal regulations and preparation of financial expenditure reports and serves as a resource center on the contractual matters of sponsor regulations for all faculty and

academic business offices. As noted in earlier sections, the type of award typically provided by a funding entity will be either a grant, cooperative agreement, or a contract.

Before an award is executed, any proposed modification of the terms and conditions of the sponsored project, including changes to the scope of the work, budget, or an extension of the period of performance, will be forwarded by the WVU OSP to the appropriate agency official. The awarding documents received from sponsoring agencies come in several forms as described in “Types of Awards” section of this document. Regardless of the type of award, several things happen at the WVU OSP when a funding agency issues a notice of award.

Award Review	The WVU OSP reviews the award package from an agency. Before the signing-off occurs, several things must be reviewed and considered:
Actual Award Budget vs. Proposed Budget	The WVU OSP will review and compare the budget indicated on the funding agency award notification against the original proposed budget submitted by the PI to the agency. Should a discrepancy be discovered, the WVU OSP will alert the PI to the discrepancy and determine the reason for the difference(s). The WVU OSP will not sign off on an award unless the PI and the WVU OSP concur that the revised award budget is satisfactory to implement and complete all deliverables in the award workplan.
Terms and Conditions	WVU OSP communicates to the PI any non-standard terms and conditions associated with any sponsored agreement. It is important for the PI to understand these terms and conditions before the contract can be executed (e.g., publication rights, intellectual property issues, etc.).
Regulatory Issues	Before sponsor funds can be made available to a PI, WVU OSP must ensure that all required regulatory approvals are in place and current. To document these approvals for projects involving human or vertebrate animal subjects and/or recombinant DNA or other potentially biohazardous materials, the post-award professionals at the WVU OSP review the award file to identify any potential regulatory issues. During this review, OSP works with the PI to identify the appropriate approved protocols corresponding to the specific research proposed.
Signature(s)	As noted earlier, no one at the SoP, on their own, has the authority to sign a sponsored funding agreement (grants, contracts) with a funding entity. This occurs at the WVU OSP and is required to move the agreement forward.
Project Setup	Once all negotiations are finalized and required signatures are in place, the sponsored project must now be established within the University system so that the PI can begin implementing his/her project. To receive information on the award process, administrative requirements and status of a particular award, contact the WVU OSP or the SoP Grants Administrator.
Budget Setup	The Office of Sponsored Programs is responsible for entering awards into the University's financial system. This occurs following several possible events: notification from the SoP Departmental Administrative contact, the SoP Expert Business Office (EBO), or the SoP Grants Administrator. When entering the financial information, OSP personnel establish the following information for project financial account set-up:

Departmental Activity (DA) Number

This is a 9-digit number that translates to an expenditure organization such as "sponsored programs research" or "research cost-sharing" or "anatomy accounts" and is specific to the SoP. If your project includes cost-sharing, you will need to provide two DA numbers. Note that there is no need to have a new DA number for every project. New DA numbers can take some time to process.

Line Item Budget

If more than one department or college is involved in the project, OSP needs to know how many Mountaineer Administrative Processes (MAP) "tasks" to establish and also needs the DA and line item budget for each.

Cost-Sharing

If cost-sharing is a part of your project, the OSP needs to know from where your cost sharing originates and the DA for the cost-sharing. Note that it is not possible to release funds without the cost sharing information.

Compliance Issues

If compliance issues (human subjects, animal use, biohazards, or radiation) are involved, OSP will not release funds until the appropriate review board has approved the protocol.

Note: The WVU Research Corporation is the fiscal agent for external awards. Financial matters are under the Office of the Financial Affairs and Research Accounting. WVU OSP matters dealing with purchases are handled by the Office of Procurement Services.

Get to Know Your Program Officer

Funding agency program officers are a great resource for implementing your project. Remember that the success of the program officer is embodied by the quality of those projects under their control. They have a vested interest in your success.

Project Kick-off Meeting

Once all of these items are in place, it is recommended that the PI initiate a project kickoff meeting for all projects—both large and small. In this meeting, the PI will review the goals and objectives of the project and confirm the project team roles in the management of the project and to ensure their roles are understood. Other than the PI, team members attending the kickoff meeting may include, but not be limited to, the department chair, a program assistant or other department administrative contact, grants administrator, an EBO contact, the finance and business manager, and Co-Is.

ROLES AND RESPONSIBILITIES IN AWARD MANAGEMENT

Principal Investigator

The PI's role in a project is to ensure that research conducted and reported is high quality and consistent with the mission of WVU. The PI must ensure that all activities and conditions of the funding agreement are met and ensure that only proper budget expenditures are made and that budget categories are not over-expended. The PI has primary responsibility for

accomplishing the technical goals of the project *and* complying with the financial and administrative policies and regulations associated with the award. Although the PI is not expected to personally perform all of the technical, financial, and other functions related to the project, s/he is expected to carefully review all of the associated outputs generated by responsible parties and confirm that they are in compliance with the award. Therefore, PIs should meet with team members to assist him/her in project implementation. Specifically, in the post-award phase the PI should:

- Implement the project as outlined in the funded proposal, using sound management techniques
- Authorize only those reasonable and necessary expenditures to accomplish the project goals and are consistent with the sponsor's terms and conditions
- Spend no more than the amount authorized by the sponsor for the budget period
- Complete the project's financial plan as presented in the funded proposal budget, or make changes to the workplan in accordance with a prescribed set of policies and procedures set forth by the funding agency
- Report project progress to the sponsor as outlined in the terms of the award
- Regularly review expenditures to assure their appropriateness and accuracy
- Comply with all WVU policies and procedures related to project management and personnel practices
- Comply with all applicable sponsor rules, regulations and/or terms and conditions of the award

Department
Administrative
Assistant

The administrative assistant or program assistant works with the PI and provides administrative support to the PI. Most administrative support personnel are adept at handling a multitude and breadth of administrative tasks and issues primarily they should:

- Generate monthly expenditure reports for the PI
- Resolve purchase, transaction, and other routine issues
- Establish and maintain award files

Budget Analyst
and Finance and
Business
Administrator

The SoP budget analyst, administrative assistant, and Finance and Business Administrator should work closely and coordinate efforts in the implementation of a sponsored project. Specifically, the budget analyst will:

- Ensure transactions are completed per federal, state, and University laws, policies, and guidelines
- Train departmental staff in generating reports to assist PIs in managing their projects
- Ensure transactions are completed in a timely manner and correctly charged to the appropriate grants/contract
- Provide assistance to Program Assistants and PI to resolve purchasing, travel, and contractual matters
- Generate monthly personnel and fringe expenditure reports for Program Assistants so that they may generate full expenditure reports
- Provide assistance to Program Assistants to enable them to generate monthly project expenditure reports and expenditure projections through project end.
- Assist PIs, in all personnel issues including recruitment, effort reports, and all other issues surrounding personnel associated with their projects

Grants Administrator

The grants administrator ensures that the grants process, both pre- and post-award, works smoothly and will work with members of the project team to trouble-shoot and provide assistance when/where needed. More specifically, the grants administrator will:

- Coordinate actions between PI, OSP, and Business Office as needed
- Help Program Assistants in monitoring budgets and generating reports for PI
- Assist with grant modifications as needed

THE AWARD FILE SET UP

Setting up your administrative files at the beginning of an award will help keep you organized throughout the life of the award and make close-outs and audits a much simpler task. The award file (see Figure 3) should have seven major tabs and contain the following information:

- Application Package
- Correspondence
- Award Documents (Green Sheet Package)
- Grant Adjustments
- Financial Status Reports
- Progress Reports
- Review and Audit Resolution

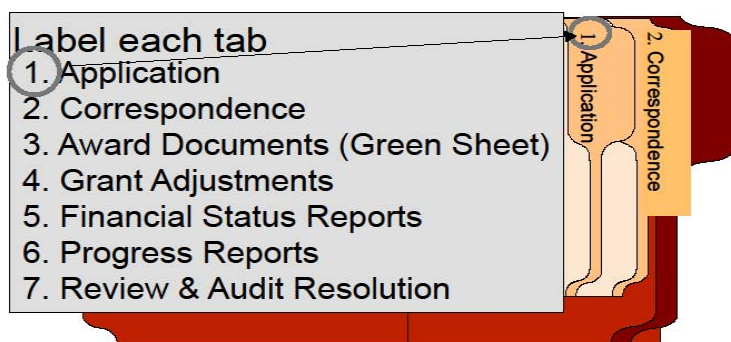


Figure 3: Sample Award File

Application Package

This is the proposal package that is the official copy sent to the funding agency, including the WVU Application (Blue) Sheet.

Correspondence

These are all correspondences, including copies of emails, to the funding agencies. Some PIs also include a call log that includes the date of the call, the content of the conversation, and any follow-ups.

Award Documents	The award documents consist of notification paperwork from the funding agency and WVU OSP (Green Sheet).
Grant Adjustments	This is all information pertaining to changes and modifications made into the sponsored project. This includes actions like no-cost extension requests, changes in PI, etc.
Financial Status Reports	This includes all official and required reports of a funding agency. In addition, this includes all internally printed monthly project status reports filed chronologically.
Progress Reports	A copy of all required progress files will be included in this folder. These reports will be organized in chronological order.
Review and Audit Resolution	<p>Sponsored projects are occasionally audited. Maintain your files as though you assume your project will be audited. These audits can be either an internal audit initiated within WVU or externally initiated by a funding agency. The PI is best served expecting that they will be audited at some point in the future. Keeping an accurate and up-to-date award file will equip the PI with the information they need to successfully navigate through this event. As part of the award file, it is important for the PI to be ready to do this in the proper way. This section of the award file should include:</p> <ul style="list-style-type: none"> ➤ A copy of all post-award policies and procedures (for now, this <i>Research Handbook</i> will suffice) ➤ A list of all fund accounts associated with the individual project ➤ All correspondence and documentation associated with the audit

FINANCIAL MANAGEMENT



Click here for more information

Funding entities, especially federally funded sponsored projects require strict oversight management. One area in particular is the area of financial management. During the financial management and oversight regular reports should be generated to the PI. The information is available on Mountaineer Administrative Processes (MAP) and monthly reports should include:

Current Month Expenses	This column represents all income (when earned) and expenditures for the month the report represents, broken out by accounts, and totaled by project. Each individual transaction may be listed separately in a more detailed transaction report.
Project to Date Income/Expenses	This column represents the total expenditures from the start date of the project, broken out by account, and totaled by project. Current month expenditures will have been added to this figure.
Current Encumbrances	When WVU employs an individual for a given period, or commits University funds through the use of a purchase order for contractually provided goods or services, a transaction is encumbered and reported under this column. It will show up as encumbered until it the encumbrance is expended.
Balance Available	This identifies the funds, which are neither expended nor encumbered on the project. The balance available in the “Total Expenditure” row represents both direct and Facilities and Administrative (F&A) costs currently available on the project.

Projected Through
Project End

It is highly recommended, especially on larger projects, that the PI account for projected expenditures through project end. Whether included before or after, the Balances Available column including this information provides the PI with additional flexibility in expenditure decision-making.

Training for administrative support staff involving the generation of this report will be conducted by the SoP Grants Administrator in conjunction with the SoP Business Office.

REPORTING REQUIREMENTS

Generally during the implementation phase, grants, contracts, cooperative agreements, and other sponsored projects, the funding entity requires regular progress reports. The sponsors determine the format, frequency, depth, and breadth of the reporting. Other types of reports may be required as well. Reporting requirements vary; however, some of the most common types of reports include effort and interim progress, a variety of final reports, and patent or invention reports.

Effort Reports

Effort reporting is required by federal regulations, specifically the Office of Management and Budget Circular A-21 that governs the spending of federally sponsored funds. Effort reports are the University's legal records of how it spends the sponsoring agency's money on salaries. Effort Reporting is a means of verifying that effort supported (paid) by the project has been performed as promised as salaries constitute the largest component of the expenses charged to sponsored projects. Sponsor representatives and University internal and external auditors can review reports at any time.

Interim Progress
Reports

The PI is responsible for submitting interim progress reports to the sponsor as required by the funding agency. If no format is outlined by the funding entity, the PI should use a standard format that addresses the following:

- A review of the accomplishments/activities to-date as compared with the schedule and objectives outlined in the original proposal
- A review of the challenges and barriers faced in attempting to meet the schedule and objectives as outlined in the original proposal
- Supporting statistical data or documentation that supports your review statements
- Management activities, such as documentation or materials produced, and personnel issues relating to key personnel

MAKING CHANGES TO YOUR PROJECT

It is not unusual for a project to require a modification or an adjustment to reflect a change in circumstances associated with a sponsored project. When the PI seeks to make adjustments to the project, approval may or may not be necessary. In this section, we will explore some of the typical changes that may be made to a project and what needs to be done to effect these changes. To determine if the proposed change in your project requires prior approval, contact your grants administrator. Routine changes to a project include but are not limited to:

- Rebudgeting
- Change in scope of a project
- Changes in key personnel
- No cost extensions
- PI transfers

Rebudgeting	<p>After a grant or contract has been awarded, the PI may determine that the approved budget allocations are not consistent with actual project needs. He/she may request the formal reallocation of funds from one spending category to another object that better reflects the project requirements. This process is called rebudgeting</p> <p>Informal rebudgeting occurs when actual expenditures exceed or fall short of the original allocated amount budgeted in a category or when actual expenditures occur in a funding category that has no budget allocation.</p> <p>Many funding entities allow rebudgeting without prior approval while others require approval when rebudgeting into or out of a spending category exceeds a specified percentage of the award amount. Contact your grants administrator if you have a question about this. If prior approval is not required, then formal rebudgeting is not necessary, but may be requested to assist in budget management.</p>
Change in Scope of a Project	<p>When a PI seeks to change the scope or research objectives of their project, they are typically required to seek approval from their funding entity. Actions likely to be considered a change in scope or objectives include, but are not limited to, the following:</p> <ul style="list-style-type: none"> ➤ Change in the specific aims approved at the time of award ➤ Substitution of one animal model for another ➤ Any change from the approved use of animals or human subjects. ➤ Shifting the emphasis of the research from one area to another ➤ Applying a new technology (i.e., changing assays from those approved to use of a different type of assay.) ➤ Transferring the performance of substantive programmatic work to a third party by contract or any other means ➤ Change in key personnel whose expertise is critical to the approved project
Changes in Key Personnel	<p>Typically, a PI at WVU is required to seek approval in writing before substituting or replacing a key person. If the PI is absent from the project for three months or more, a substitute must be proposed by WVU and must be approved by the funding entity. The request for approval of a substitute PI or other key person should include a justification for the change, the curriculum vitae of the individual proposed, and any budgetary changes resulting from the proposed change.</p>
No Cost Extensions	<p>A PI is expected to complete work under sponsored agreements within the project period specified in the award. However, if the PI needs additional time to complete the approved scope of work, with available remaining funds, the sponsor may consider a request to extend the expiration date of the award at no additional cost. Federal sponsors do not consider funds remaining at the end of the award as sufficient justification for an extension of time. Normally, no single extension may exceed twelve months and only in exceptional cases will more than one extension be granted. Should you need assistance with this, contact your grants administrator</p>

PROJECT CLOSEOUT

In the preceding section, we discussed some of the reporting requirements associated with project implementation. Once the project is completed, there are more activities, reports, and other obligations that will need to be fulfilled in order to close out a project. Typically, sponsored projects may require some or all of the following reporting: final technical, final financial, and patent and invention reports. Where contracts are involved, a closeout may also require the submission of a final invoice.

To determine reporting and other closeout requirements, the PI should review agency requirements, the terms and conditions section of the award notification, or consult WVU OSP or your grants administrator. After the project has ended the entire project file, including accounting records, are subject to audit and should be placed in storage for the period required by the award.

If a project is not going to be completed on time or if it is expected that required reports will be submitted to the sponsor later than anticipated, it is critical that the sponsor be informed well in advance. In some instances, failure to submit timely reports will delay payment of invoices by the sponsor.

Whether an industry-sponsored project or a contract entered into with a federal or state entity, a project timetable, milestone chart, and a list of specific deliverables are required. If unavoidable delays occur, the University must have a letter or contract amendment reflecting the approved change.

Federal agencies, foundations and industry may be extremely aggressive about insisting on timely reporting as most projects are time sensitive. In addition to withholding future awards, both federal and state agencies and industry generally will not issue final payment on a project until reports are received.

Final Technical Report

The PI is responsible to submit all technical reports as required under the terms of an award, as well deliverables or products such as data, graphs, software, or other deliverables as required by the sponsored funding terms and conditions. With federally funded projects, it is usually 90 days after the end of the actual project period. Failure to submit this report on time could jeopardize future funding by the sponsor. A copy or confirmation of a final report should be submitted to WVU OSP. The PI may also provide WVU OSP with a copy of the final technical report.

Final Financial Report

WVU OSP is responsible for submitting any financial reports required in order to close out the award. Typically, the expiration of an agreement usually requires a final invoice and/or final financial report from the University to the sponsor.

Patent and Invention Report

When required by the sponsor, the Office of Technology Transfer (OTT) will complete a final patents or inventions report—even if there is nothing to report. If a patentable idea, invention, or discovery is made as a result of a sponsored project, the disclosure of such must be made through OTT or the University may lose rights to the invention. The PI must contact OTT as soon as possible to start the patent process.

RECORDS RETENTION

The retention of records after an award closeout is important and, in many cases, is required by a funding entity. Keeping these accurate research and administrative records are an essential component of any research project. The University and the PI have responsibilities and rights concerning access to, use of, and maintenance of original research data regardless of the source of funding for the project.

As a recipient of funds, WVU retains records after an award has ended to demonstrate that it has:

- Complied with the terms of sponsored project agreements
- Protected and secured intellectual property rights
- Ensured appropriate use of animals, human subjects, recombinant DNA, etiological agents, radioactive materials, etc.
- Protected the rights of students, postdoctoral scholars, and staff regarding their rights to access data from research in which they participated and their rights to publish the results of such research
- Properly managed and implemented the project according to agency standards

Duration of Record Retention

For most federal funding, research data must be archived for a minimum of three years after the final project close-out, with original data retained wherever possible. However, there are special circumstances where a longer length of retention time is needed. These include:

- Data that must be kept for as long as needed to protect intellectual property and complete patent and license procedures for inventions resulting from the work
- Data that must be retained until any charges regarding the research arise, such as allegations of scientific misconduct, conflict of interest, or questions involving allocable and allowable costs are fully resolved
- Data having to be retained at least until it is clear that a student involved in the research has finished their degree or abandoned work on the project

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Resources/Appendices

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Overview of Funding

Sources of Funding



Experienced researchers are aware of the many sponsored funding opportunities that are available to researchers. These include federal, state, University, and foundation and industry sources. Overlaying these sources are funding opportunities that target special audiences like new investigators, student awards, fellowship and scholar awards, and other miscellaneous awards like equipment, training, and program awards. In this section, we will introduce and enumerate some of these sources to provide the reader with a feel for what's out there and available. In the “Resources” section of this document, more information about specific award opportunities will be provided. When you have questions about funding, feel free to contact the Associate Dean for Research and Graduate Programs or your Grants Administrator for assistance.

FEDERAL FUNDING

Most federal funding for the WVU School of Pharmacy (SoP) is derived from federal sources—primarily from the National Institutes of Health (NIH). Much of the terminology and focus for this document relates to NIH funding opportunities. However, historically the SoP is, and has been, funded from a variety of federal agencies to include the Department of Health and Human Services (DHHS), the Department of Homeland Security, Agency for Healthcare Research and Quality (AHRQ), and the Department of the Army—just to name a few. Most federal proposal submissions are done electronically through Grants.gov. However, always read your funding announcements for submission requirements. This is important even if you have routinely submitted proposal of that type in the past because the NIH rules and proposal forms have constantly changed in recent years.

- National Institute of Health (NIH) - <http://grants.nih.gov/grants/guide/index.html>
- National Science Foundation (NSF) - <http://www.nsf.gov/>
- US Department of Health and Human Services - <http://www.hhs.gov/grants/>

WEST VIRGINIA UNIVERSITY

West Virginia University (WVU) offers many funding programs designed to encourage and facilitate research—oftentimes with the hope of laying the groundwork for more funding.

Program to Stimulate Competitive Research (PSCoR)

The WVU Research Corporation offers the PSCoR (Program to Stimulate Competitive Research) Grant to researchers. The primary intent for these funds is to increase faculty competitiveness in obtaining extramural research support, i.e., to support efforts that lead to proposal submission and external funding that will ultimately advance the WVU research enterprise. The total annual allocation is \$750,000. Calls for proposals are released in late fall with an early January submission date. The instructions and application form can be accessed at:

<http://research.wvu.edu/>

Bridge Grant

Both basic and clinical research projects are eligible for Bridge Grants which are supported by WVU HSC. Bridge grants are available for full-time faculty. Applications are accepted from junior and senior investigators, including departmental chairs, division heads, and center directors. This program emphasizes support for faculty who have maintained an externally funded program, but are now experiencing a lapse in external funding. The program may also support newly developed research projects that have been submitted to external agencies and received a very good review score, but were not funded. In this case, the funding is intended to help the project become more competitive through the acquisition of more preliminary data.

<http://www.hsc.wvu.edu/resoff/Internal-Funding-Sources/bridge-funding-grants.aspx>

Research Funding Development Grants (RFDG's)

Both basic and clinical research projects are eligible for Research Funding Development Grants (RFDG), which are supported by WVU HSC. RFDG funding is available to full-time faculty. Its main purpose is to stimulate new research projects and thus is primarily intended for junior faculty who have not yet established independent research programs. This funding is also available to senior faculty who wish to expand their research programs in new directions. An RFDG is awarded on the assumption that the investigator will submit a grant to external funding agencies. The instructions and application form can be accessed at:

<http://www.hsc.wvu.edu/ResOff/Research/Resources/rfdgappinfo.aspx>

Mary Babb Randolph Cancer Center (MBRCC) Pilot Project Grants (PPG)

The Mary Babb Randolph Cancer Center (MBRCC) and Office of Research and Graduate Education announce the availability of American Cancer Society (ACS)-supported Pilot Project Grants (PPG). Applicants may include faculty from the Schools of Medicine, Dentistry, Nursing, and Pharmacy or other WVU Schools and Colleges. As stated in the ACS Institutional Research Grant (IRG) policy and guidelines, IRG PPGs are intended to support independent, self-directed investigators early in their careers. The instructions and application form can be accessed at:

<http://www.hsc.wvu.edu/resoff/hscresoff/cancer/cancerapp.asp>

Senate Research Grants for Research and Scholarship

Senate Research Grants are designed to stimulate and support creative scholarship and research conducted by full-time faculty and to encourage development of additional support from other sources. Faculty on the regional campuses at Potomac State College, WVU-Parkersburg, and WVU Institute of Technology should seek support similar to that of the Senate Research Grant Program on their respective campuses. The Office of Sponsored Programs receives the applications for this program. The instructions and application form can be accessed at:

http://osp.research.wvu.edu/funding_source/grants/sentaegrant-scholar

Faculty Development Grant Program

The Faculty Development Grant Program supports activities that lead to professional growth in teaching, research and service for extension agents and for faculty on the Morgantown and Charleston campuses. The instructions and application form can be accessed at:

http://osp.research.wvu.edu/funding_source/grants/faculty_dev

The Faculty Travel Grant Program

The Faculty Travel Grant Program helps full-time faculty attend regional, national, or international professional affairs to present or perform scholarly or artistic works. West Virginia University Foundation is the primary source of funds for this program. The maximum award is \$550 for assistant, \$450 for associate, and \$400 for full professors, with an additional \$150 for international travel. The Office of Sponsored Programs receives the applications for this program. The instructions and application form can be accessed at:

http://osp.research.wvu.edu/funding_source/grants/faculty_dev

WVU Grants for Public Service

WVU Grants for Public Service are designed to stimulate and support public service projects conducted by members of the Faculty Assembly and other full-time regular employees, and to encourage development of additional support for these projects from other sources. WVU Grants for Public Service may support activities of a primary applicant, or they may support projects which involve other faculty, staff, and students (students must be under the supervision of a faculty member). The committee also recognizes that certain projects require one or more assistants in order to fulfill important objectives. Projects involving other agencies or organizations should contain an explanation of the relationship between that organization and the applicant. The instructions and application form can be accessed at:

http://osp.research.wvu.edu/funding_source/grants/public_service

International Grants

These grants are to support international collaboration efforts. Before applying for funding through the International Grant Program, please contact Dr. Michael Lastinger, Director of the Office of International Programs, by e-mail at Michael.Lastinger@mail.wvu.edu or by phone at (304) 293-6955. The instructions and application form can be accessed at:

http://osp.research.wvu.edu/funding_source/grants/international

Genomic
Discovery Grants

With the Genomic Discovery Grants (GDC), basic, translational, and clinical research projects are all eligible for GDG awards. The main purpose of these awards is to stimulate new research projects focused on global gene expression analyses using Affymetrix microarray technology. Awards include technical support for processing tissue, probe generation, microarray hybridization, and microarray analysis. Up to ten microarray chips are also included per award. A GDG is awarded on the assumption that the investigator will submit a grant to an external funding agency within twelve months following completion of the microarray analysis. The instructions and application form can be accessed by [clicking here](#).

WVU Public
Service Grant
Program

WVU Grants for Public Service are designed to stimulate and support public service projects conducted by members of the Faculty Assembly and other full-time regular employees, and to encourage development of additional support for these projects from other sources. WVU Grants for Public Service may support activities of a primary applicant, or they may support projects which involve other faculty, staff, and students (students must be under the supervision of a faculty member). The committee also recognizes that certain projects require one or more assistants in order to fulfill important objectives. Projects involving other agencies or organizations should contain an explanation of the relationship between that organization and the applicant. The instructions and application form can be accessed at:

http://osp.research.wvu.edu/funding_source/grants/public_service

WVU CTSI and
OSUCCTS
Appalachian
Outreach Joint
Pilot Award

The Ohio State University (OSU) Center for Clinical and Translational Science (CCTS) Community Engagement (CE) Program and the West Virginia Clinical Translational Science Institute (WV CTSI) Community Engagement and Research (CER) Program are jointly sponsoring a pilot research award designed to stimulate collaboration between the respective campuses as well as increase community engaged research. The instructions and application form can be accessed at:

<http://www.wvctsi.org/pages/Research-Resources/Pilot-Funding>

CTSA
Partnership
Grants

The West Virginia Clinical and Translational Science Institute, the Indiana Clinical and Translational Science Institute, and the Ohio State University Center for Clinical and Translational Science, announce the availability of pilot project funding for clinical and translational research. Awards will be for collaborative efforts between faculty at WV CTSI institutions (WVU, CAMC / WVU-C, and WVSOM) and either the Indiana CTSI or the OSU CCTS. The instructions and application form can be accessed at:

<http://www.hsc.wvu.edu/resoff/hscresoff/CTSA/CTSAapp.asp>

STATE OF WEST VIRGINIA

EPSCoR

Experimental Program to Stimulate Competitive Research (EPSCoR) creates grant opportunity alerts which are posted on-line. Interested persons can also sign up for email notices of grant opportunities. More information is available at the West Virginia Higher Education Policy Commission, Division of Science and Research web site at:

<http://www.wvresearch.org/>

To guide the WV EPSCoR and its evolution, a set of primary goals has been established. The goals of the program are as follows:

- Sponsor and maintain world-class research
- Develop academic resources, a skilled workforce and a competitive research infrastructure
- Encourage the transfer of technology to support economic growth, jobs, and life enhancement
- Encourage participation of K-12, women, rural underserved and minorities in science, technology, engineering, and mathematics
- Maintain a focus within state government to attain these goals statewide

FOUNDATION AND INDUSTRY

Professional associations, philanthropic, and industry foundations sponsor funding in a large variety of funding research areas. Private funding sources represent an important, but often-overlooked resource. There are approximately 103,000 foundations and 1,300,000 nonprofit organizations across the United States. Each private funding source has its own set of eligibility criteria and application requirements.

Special Audiences and Targeted Funding

While there are a number of governmental and non-governmental sources of funding for research and other activities, some extramural funding entities provide funding opportunities that target individual or groups in the hopes of encouraging its growth and development. These include, but are not limited to, new and early stage investigators, fellowships, scholar awards, and student awards.

NEW AND EARLY-STAGE INVESTIGATORS

According to the NIH, new investigators are the innovators of the future. They bring fresh ideas and technologies to existing biomedical research problems, and they pioneer new areas of investigation. Entry of new investigators into the ranks of independent, NIH-funded researchers is essential to the health of this country's biomedical research enterprise. NIH's interest in the training and research funding of new investigators is

great. Special programs to assist new investigators in obtaining independent research funding have been created.

To address this issue, the NIH established a new policy involving the identification of Early Stage Investigators (ESIs). These are new investigators who are within ten years of completing their terminal research degree or within ten years of completing their medical residency at the time they apply for the NIH R01 grants. Applications from ESIs will be given special consideration during peer review and at the time of funding. Peer reviewers will be instructed to focus more on the proposed approach than on the track record, and to expect less preliminary data than would be provided by an established investigator. To learn more, go to:

http://grants.nih.gov/grants/new_investigators/index.htm

Definition of New Investigator

According to the NIH, a Program Director/Principal Investigator (PD/PI) is considered a New Investigator if he/she has not previously competed successfully as PD/PI for a significant NIH independent research award other than the following early stage or small research grants or for the indicated training, infrastructure, and career awards:

- Pathway to Independence Award-Research Phase (R00)
- Small Grant (R03)
- Academic Research Enhancement Award (R15)
- Exploratory/Developmental Grant (R21)
- Research Education Grants (R25, R90, RL9, RL5)
- Clinical Trial Planning Grant (R34)
- Dissertation Award (R36)
- Small Business Technology Transfer Grant-Phase I (R41)
- Small Business Innovation Research Grant-Phase I (R43)
- Shannon Award (R55)
- NIH High Priority, Short-Term Project Award (R56)
- Competitive Research Pilot Projects (SC2, SC3)

In addition, the PD/PI is not excluded from consideration as a New Investigator if he/she has been the PD/PI or received an award from any of the following classes of awards:

- Training-Related and Mentored Career Awards
- All Fellowships (F awards)
- All individual and institutional career awards (K awards)
- Loan repayment contracts (L30, L32, L40, L50, L60)
- All training grants (T32, T34, T35, T90, D43)
- Instrumentation, Construction, Education, Health Disparity Endowment Grants, or Meeting Awards
- G07, G08, G11, G13, G20
- R13
- S10, S15, S21, S22

Early Stage Investigator Policies

This policy represents a change in NIH New Investigator policies designed to encourage early transition to independence. Under this policy, New Investigators within ten years of completing their terminal research degree or within ten years of completing their medical residency will be designated Early Stage Investigators (ESIs). Traditional NIH research grant (R01s) applications from ESIs will be identified and the career stage of the applicant will be considered at the time of review and award.

For more information regarding this program, see:

http://grants2.nih.gov/grants/new_investigators/investigator_policies_faqs.htm

Pathway to Independence Award (K99-R00)

The primary, long-term goal of the Pathway to Independence (PI) Award program is to increase and maintain a strong cohort of new and talented NIH-supported independent investigators. The PI award program is designed to facilitate a timely transition from a mentored postdoctoral research position to a stable independent research position with independent NIH or other independent research support at an earlier stage than is currently the norm.

For more information regarding this program, see:

http://grants2.nih.gov/grants/new_investigators/QsandAs.htm

NIH Director's New Innovator Award

The NIH Director's New Innovator Award addresses two important goals: stimulating highly innovative research and supporting promising early stage investigators. Many new investigators have exceptionally innovative research ideas, but not the preliminary data required to fare well in the traditional NIH peer review system. As part of NIH's commitment to increasing opportunities for new scientists, it has created the NIH Director's New Innovator Award to support exceptionally creative early stage investigators who propose highly innovative projects that have the potential for unusually high impact. This award complements ongoing efforts by NIH and its institutes and centers to fund new investigators through R01 grants and other mechanisms.

For more information regarding this program, see:

<http://nihroadmap.nih.gov/newinnovator/faq.asp>

RELATED FELLOWSHIP AND SCHOLAR AWARDS

The National Science Foundation (NSF) and many of the institutes that form the National Institutes of Health (NIH) offer fellowships for graduate students. These provide year-round stipends, tuition, and some funding for research activities and training (such as workshops and conferences).

The following are common fellowships:

- American Heart Association Predoctoral Fellowship
- Department of Defense Breast Cancer Research Program Predoctoral Traineeship
- Ford Foundation Predoctoral and Dissertation Fellowships for Minorities

- National Consortium for Graduate Education for Minorities in Engineering and Science
- National Defense Science and Engineering Graduate Fellowship Program
- National Institutes of Health Individual Predoctoral Kirschstein Fellowships (F31)
- National Research Service Awards for Minority Students (F31)
- NHLBI Ruth L. Kirschstein National Research Service Awards for Individual Predoctoral MD/PhD Fellows (F30)
- Ruth L. Kirschstein National Research Service Awards for Individual Predoctoral MD/PhD Fellows (F30)
- National Science Foundation Graduate Research Fellowship
- The Paul & Daisy Soros Fellowships for New Americans
- Fraxa Research Foundation
- John E. Fogarty International Center for Advanced Study in the Health Sciences

American Heart Association
Predoctoral Fellowship

These are two-year awards providing stipend and money towards health insurance and project support. The researchers can receive a third year of funding but must reapply for competitive review. Applicants must be a US citizen, permanent resident, exchange visitor (J-1), temporary worker in a specialty occupation (H-1B), NAFTA professionals (TN), temporary worker with extraordinary abilities in the sciences (O-1) or student visa (F-1). Must pass qualifying or comprehensive exam prior to activation of the award. The deadlines are in mid-January and mid July. For more information, [click here](#).

American Society for Microbiology,
Robert D. Watkins
Minority Graduate Fellowship

These are three-year awards providing stipends. Applicants must be US citizens or nationals or permanent residents of the United States and must be a member of one of these groups: African Americans, Hispanic Americans, Native Americans or Native Pacific Islanders. These fellowships are intended for students who have completed the first year of graduate school and will have completed all graduate coursework requirements by the start date of the award. The deadline is the first of May. For more information, [click here](#).

Department of Defense Breast Cancer Research Program
Predoctoral Traineeship

These are three-year awards providing stipend, tuition, and travel to scientific meetings. All individuals—regardless of ethnicity, nationality, or citizenship status—may apply as long as they are employed by, or affiliated with, an eligible institution. These fellowships are intended to support the trainee during dissertation research rather than rotations or basic course work. The deadline is in early May. For more information, go to:

<http://cdmnp.army.mil/funding/>

Ford Foundation
Predoctoral and
Dissertation
Fellowships for
Minorities

These are three-year awards providing stipend and an institutional allowance. Applicants must be US citizens or nationals and must be a member of one of these groups: Alaska Natives, Black/African Americans, Mexican Americans/Chicanas/Chicanos, Native American Indians, Native Pacific Islanders, or Puerto Ricans. Ford fellowships are intended for students who have enrolled in or plan to enroll in a PhD program by the following fall. Most often, applications may be submitted during the senior year of college or during the first three years of graduate school. The deadline is mid-November. For more information, go to:

<http://national-academies.org/fellowships>

National
Consortium for
Graduate
Education for
Minorities in
Engineering and
Science

These are five-year awards providing stipend and tuition for one year. Applicants must be US citizens and must be a member of one of these groups: American Indian, African American, Latino, Puerto Rican, or other Hispanic American. The deadline is the first of November. For more information, go to:

<http://www.gemfellowship.org/>

National Defense
Science and
Engineering
Graduate
Fellowship
Program

These are three-year awards providing stipend and a small health allowance. Applicants must be citizens or nationals of the United States. People who hold permanent resident status are not eligible to apply. NDSEG Fellowships are intended for students at or near the beginning of their graduate studies in science or engineering. The deadline is early January. For more information, go to

<http://www.asee.org/ndseg/preface.cfm>. For the instructions and application forms go to <http://www.asee.org/ndseg/instructions.cfm>. To apply online go to <http://www.asee.org/ndseg/online/online.cfm>

National Institutes
of Health Individual
Predoctoral
Kirschstein
Fellowships

Always check the NIH Website for the most current PA Announcement: at:

http://grants.nih.gov/grants/guide/search_results.htm?year=active&scope=pa

National Research
Service Awards for
Minority Students
(F31)

These are five-year awards providing stipend and institutional allowance. Applicants must be US citizens, nationals, or permanent resident aliens and must be a member of one of these groups: African Americans, Hispanics, Native Americans, Alaskan Natives, or Pacific Islanders. The deadlines are April 15th, August 13th, and December 13th. For more information go to

<http://grants1.nih.gov/grants/guide/pa-files/PA-11-112.html>

National Research Service Awards Fellowships (F31)

These are five-year awards providing stipend and institutional allowance. Applicants must be US citizens, nationals or permanent resident aliens. The Institutes listed below award NRSA individual predoctoral fellowships (F31) to promising applicants with the potential to become productive, independent investigators in the scientific mission areas of these Institutes. This program will provide predoctoral training support for doctoral candidates that have successfully completed their comprehensive examinations or the equivalent by the time of award and will be performing dissertation research and training. The National Institute on Alcohol Abuse and Alcoholism (NIAAA), the National Institute of Biomedical Imaging and Bioengineering (NIBIB), the National Institute on Deafness and Other Communication Disorders (NIDCD), the National Institute on Drug Abuse (NIDA), the National Institute of Mental Health (NIMH), and the National Institute of Neurological Disorders and Stroke (NINDS) of the National Institutes of Health (NIH) provide National Research Service Awards (NRSAs) to individuals for doctoral-level training. The deadline is April 8th for a start date between August – December, August 8th for a start date between December – March and December 8th for a start date between Aprils – June. For more information, go to

http://grants.nih.gov/training/f_files_nrsa.htm

NHLBI Ruth L. Kirschstein National Research Service Awards for Individual Predoctoral MD/PhD Fellows (F30)

These are six-year awards providing stipend and institutional allowance. Applicants must be US citizens, nationals or permanent resident aliens. This funding opportunity supports individual predoctoral F30 fellowships with the expectation that these training opportunities will increase the number of future investigators in basic, translational and clinical research who are physician scientists. The NRSA legislation requires that the Nation's overall need for biomedical research personnel be taken into account by giving special consideration to training physicians who propose to become active biomedical researchers. The NHLBI recognizes the critical importance of training physicians and scientists to become physician-scientists including those conducting translational research and patient-oriented research. For additional information, go to:

<http://grants.nih.gov/grants/guide/pa-files/PA-08-021.html>

National Science Foundation Graduate Research Fellowship

These are three-year awards providing stipend and a cost of education allowance. Applicants must be US citizens, nationals or permanent resident aliens. Applications may be submitted during the senior year of college and during the first or second year of graduate school. The deadline is November 22. For more information, go to:

<http://www.nsf.gov/grfp> or <http://www.nsfgrfp.org/>

The Paul & Daisy Soros Fellowships for New Americans

These fellowships are grants for up to two years of graduate study in the United States. The recipients are chosen on a nationally competitive basis. Thirty Fellowships will be awarded each year. Each year the Fellow receives a maintenance grant of \$20,000 (paid in two installments) and a tuition grant of one-half the tuition cost of the US graduate program attended by the Fellow (up to a maximum of \$16,000 per academic year). The deadline is the first of November. To review eligibility and for more information, go to:

<http://www.pdsoros.org>.

Fraxa Research
Foundation

This foundation funds biomedical research aimed at finding a specific treatment for Fragile X syndrome, particularly preclinical studies of potential pharmacological & genetic treatments; no citizenship requirements; individuals nominated by applicant institutions should have training and experience at least equal to the PhD or MD level. To review eligibility and for more information, go to:

<http://www.fraxa.org/>

John E. Fogarty
International
Center for
Advanced Study in
the Health
Sciences

This site has a directory for grants and fellowships in the global health sciences with a focus on grants and fellowships for postdoctoral researchers. The online *Directory of International Grants and Fellowships in the Health Sciences*, a comprehensive compilation of international funding opportunities in biomedical and behavioral research, is maintained by the Fogarty International Center, the international component of the US National Institutes of Health (NIH). The Postdoctoral Directory includes grants and fellowships for researchers in the postdoctoral stage: between completion of a doctoral degree and acceptance of a faculty position. Some opportunities are specifically for postdoctoral researchers in the early or late stage of this period, while others do not specify. When possible, grant or fellowship titles link to detailed descriptions on the sponsoring organization's Web site. To view information from this web site, go to:

<http://www.fic.nih.gov/Funding/NonNIH/Pages/postdoctoral.aspx>

SOURCES OF FUNDING FOR PHARMACY STUDENTS AND RESEARCH TRAINEES

There are sources of funding available specifically for pharmacy students. These come in the form of scholarships, internships, fellowships, grants, loans, and loan repayments. These include:

➤ SCHOLARSHIPS

- AACP Wal-Mart Scholars Program
- Phi Lambda Sigma-GlaxoSmithKline Scholarships
- National Association of Chain Drug Stores (NACDS)
- AFPE Gateway To Research Scholarships
- National Institutes of Health (NIH) Undergraduate Scholarship Program
- Novo Nordisk Pharmacy Practice Diabetes Scholarship Program

➤ INTERNSHIPS

- NIH Summer Internships
- Paul G. Cano Legislative Internship
- Pfizer Summer Internship Program in Worldwide Pharmaceuticals Operation Research
- American Society of Health-System Pharmacists (ASHP) Summer Internship
- NACDS-Howard Sternheim Summer Internship
- NIH Summer Internship Program
- Rite Aid Pharmacy Internships Program

- FELLOWSHIPS
 - AACP Congressional Fellowship Program
 - AFPE Pre-doctoral Fellowships in Pharmaceutical Sciences
 - AFPE-NACDS Foundation Faculty Development Fellowship in Community Pharmacy
 - AFPE-RPS Inc. Pharmacy Faculty Fellowships in Geriatric Pharmacy
 - Pfizer Fellowships in Public Health
 - PhRMA Pharmacology/Toxicology Post-doctoral Fellowship
 - NIH funding
 - AFPE Clinical Pharmacy Post-PHARMD Fellowships in the Biomedical Research Sciences
 - UNC Clinical Pharmacokinetics/Pharmacodynamics Fellowship

- GRANTS
 - AACP New Pharmacy Faculty Research Awards
 - AHRQ
 - APhA Incentive Grants for Practitioner Innovation in Pharmaceutical Care
 - ASHP Hospital Pharmacist-Emergency Physician Collaboration
 - ASHP Pharmacy Practice Resident Practice-Based Research Grant
 - ASHP Promoting Influenza Prevention
 - NACDS Foundation Awards to Pharmacy Schools
 - NACDS Research Grant Opportunities
 - NCPA Research Grants
 - NCRR
 - Pharmacy Practice Research Trust
 - PhRMA Pharmacology/Toxicology Research Starter Grant
 - Pharmacy Resident Practice Based Research Grant

- LOANS AND LOAN REPAYMENT
 - IHS Loan Repayment Program
 - CAMC Pharmacy Education Loan Opportunity
 - Minnesota Rural Pharmacist Loan Forgiveness Program
 - NCPA Student Loan Program
 - NIH Post-Graduate Student Loan Repayment

SCHOLARSHIPS

AACP Wal-Mart Scholars Program

The aim of this program is to prepare pharmacy students interested in a career in academia by enhancing their skills and encouraging their commitment to this pathway through their participation at the AACP Annual Meeting and Seminars. Eligibility is extended to graduate students, professional (doctorate) students, residents/fellows, and their faculty mentors. Previous recipients of this scholarship are ineligible. Support covers the cost for the student-faculty mentor pair to attend two AACP seminars held in Boston, Massachusetts; covers all of the student's and half of the faculty mentor's registration costs at the AACP Annual Meeting (early-bird rate); covers registration for both student

and faculty for the Teacher's Seminar; remainder of the scholarship can go towards airfare, lodging and other expenses. The amount of award is \$1,000 awarded and is provided to 65 student-faculty pairs each year. Application items include a general program application page; GPA verification form, student's statement of career goals, and faculty mentor's support of the student. The deadline date is typically around mid-February each year. To review eligibility and for more information, go to:

<http://www.aacp.org/career/grants/Pages/walmart.aspx>

Phi Lambda Sigma-
GlaxoSmithKline
Scholarships

This scholarship is intended to encourage outstanding Phi Lambda Sigma members to pursue the PhD in the pharmaceutical sciences in a college of pharmacy graduate program. To be eligible, an applicant must be a member of Phi Lambda Sigma and a senior pharmacy student enrolled in a dual-degree pathway leading to a professional degree in pharmacy and the PhD, or first year graduate students, entering a graduate PhD program in an accredited school or college of pharmacy as a full-time student. Applicants must be in the final year of professional studies or have completed professional studies. US citizenship or permanent resident status is required. This type of support for the awardee includes stipend and research support and includes: One (1) Phi Lambda Sigma-GlaxoSmithKline-AFPE First Year Graduate Scholarship at \$7,500. The \$7,500 may be used for any purpose decided by the awardee and faculty sponsor that will enable the student to have a successful program—e.g., student stipend, laboratory supplies, books, materials, travel, etc. related to the program of graduate study. None of the funds shall be used for indirect costs by the institution. The application items include:

1. Letters of recommendation from two college faculty members who are acquainted with the student and his/her potential for graduate study.
2. Name of the graduate school that the student plans to attend (if known).
3. A one or two page statement by applicant elaborating reasons for wishing to attend graduate school.
4. A list of special honors, awards and accomplishments in high school and college reflecting achievement and ability to succeed in graduate school. This information can be a vital part of the application.
5. An official transcript of all collegiate grades and copies of GRE, SAT, and other national achievement test scores.
6. Deadline: The following information should be by the date indicated on the web page and sent to Mary Euler, R.Ph., Executive Director, Phi Lambda Sigma Leadership Society, University of Missouri-Kansas City, 2464 Charlotte Street, HB 2314, Kansas City, MO 64108

To review eligibility and for more information, go to:

http://www.afpenet.org/firstyr_phi_lambda.htm

National Association
of Chain Drug
Stores - NACDS
Foundation
Pharmacy Student
Scholarship Program

The goal of the NACDS Foundation Pharmacy Student Scholarship Program is to support the development of future leaders in community pharmacy and to recognize pharmacy students who have a strong interest in pursuing a career in community pharmacy. The NACDS Foundation Pharmacy Student Scholarship Program also awards named scholarships recognizing gifts made to this fund by organizations or individuals to support educational development. The Teva Pharmaceuticals Robert J. Bolger Scholarship, Taro Research Foundation Scholarship, Edmond Fougera Scholarship, and Leonard J. DeMino Pharmacy Student Scholarship were created as part of the NACDS Foundation Pharmacy Student Scholarship Program to support pharmacy student scholarships. Exceptional students of the highest achievement will receive named scholarships. To be eligible the student applicant must be enrolled as a full-time pharmacy student attending a US college or school of pharmacy studying to obtain a doctor of pharmacy degree (PharmD), have completed at least one professional year of pharmacy school to apply, have experience in community pharmacy practice, and have a minimum "C" grade point average. To review eligibility and for more information, [click here](#).

AFPE Gateway to
Research
Scholarships

The purpose of this scholarship is to encourage faculty to identify promising professional degree pharmacy students to encourage them to consider advanced graduate education and careers in research. Faculty in a school of pharmacy accredited by the American Council on Pharmaceutical Education (ACPE) with active research in the pharmaceutical sciences may nominate scholars and apply on their behalf. Each scholar must be: enrolled in a PharmD program, have completed at least two years of college, be enrolled in at least the first year of the professional pharmacy curriculum, be enrolled for at least one full academic year after initiation of the award, and be a US citizen or permanent resident. Preference will be given to applications from students who need relevant research experience in order to decide whether to pursue a PhD in the pharmaceutical sciences. The amount of award: \$5,000 for one year; no less than \$4,000 is provided as a student stipend, no more than \$1,000 may be used to support the research effort.

Applicants must fill out the following items:

1. A description of proposed research
2. A mentoring plan
3. The role of student and faculty
4. A description of facilities and research environment
5. Verifications and signatures from faculty and administrators
6. Faculty member's curriculum vitae
7. Student transcripts
8. Student letter
9. Two letters of recommendation from faculty

To review eligibility and for more information, go to:

http://www.afpenet.org/under_research_scholar.htm

National Institutes
of Health (NIH)
Undergraduate
Scholarship Program

This scholarship provides the student with invaluable research training and experience and is awarded on a competitive basis to students who show a commitment in pursuing careers in biomedical, behavioral, and social science health-related research. Each scholar must: be a United States citizen or a qualified non-citizen, be enrolled or accepted for enrollment as a full-time student for the academic year at an accredited four year undergraduate institution, come from a disadvantaged background, have a 3.5 GPA or higher (on a 4.0 scale) or within the top five percent of your class. Student stipend and research awards are up to \$20,000 for one year of academic tuition.

Items to include on the application form are:

1. Discussion of commitment to biomedical science
2. Description of proposed research
3. Transcripts, test scores
4. Undergraduate institution certification form
5. Family income level
6. Three letters of recommendation

The deadline for this opportunity is March 31. To review eligibility and for more information, go to:

<https://www.training.nih.gov/programs/ugsp>

Novo Nordisk
Pharmacy Practice
Diabetes Scholarship
Program

The Program will engage Doctor of Pharmacy/PharmD students in projects that could lead to a decrease in the morbidity and mortality, and improve the quality of life of persons with diabetes. The purpose of the Program is to encourage pharmacy students to investigate the effect of pharmacist education, monitoring, interventions, or ancillary treatments on the management of persons with diabetes in the ambulatory/retail pharmacy practice environment (i.e., outcomes research). The primary goals of the Program are to increase the awareness of pharmacy students in the management of persons with diabetes; stimulate pharmacy students to be more proactive pharmacy practitioners caring for persons with diabetes in the ambulatory/retail setting; and familiarize students with the research skills necessary to evaluate the outcomes of their patient interventions. Awardees must be registered in a professional pharmacy degree program and have completed at least two years of college coursework; be students enrolled in degree programs in the pharmaceutical sciences leading to licensure; be in good academic standing; and not be enrolled in a dual degree program. The amount of award is \$5,000 (\$4,500 student stipend and \$500 for supplies). The application items include:

1. A Program budget
2. The student's career goals
3. Student's project description
4. Advisor's letter
5. Dean's recommendation
6. Transcript

The deadline is March 27. To review eligibility and for more information, go to:

<http://www.aacp.org/career/grants/Pages/default.aspx>

INTERNSHIPS

NIH Summer Internships for Biomedical Sciences

Summer programs at the National Institutes of Health (NIH) provide an opportunity to spend a summer working at the NIH side-by-side with some of the leading scientists in the world, in an environment devoted exclusively to biomedical research. The NIH consists of the 240-bed Mark O. Hatfield Clinical Research Center and more than 1,200 laboratories/research projects located on the main campus in Bethesda, MD, and the surrounding area as well as in Baltimore and Frederick, MD; Research Triangle Park, NC; Phoenix, AZ; Hamilton, MT; Framingham, MA; and Detroit, MI. The Summer Internship Program is for students who will be sixteen years of age or older at the time they begin the program and who are currently enrolled at least half-time in high school or an accredited US college or university as undergraduate, graduate, or professional students. Students who have been accepted into a college or university program may also apply. To be eligible, candidates must be US citizens or permanent residents. The amount of the student stipend and research support will depend on experience and area of research. The stipends for trainees are adjusted yearly; the level depends on prior experience. A first year graduate student will receive a monthly stipend of \$2,300. A second year graduate student will receive a monthly stipend of \$2,900. A third year graduate student will receive a monthly stipend of \$3,100. Application items: Prospective candidates must apply online. The application is available from mid-November to March 1. It requires submission of a curriculum vitae or resume, a list of coursework and grades, a cover letter describing the applicant's research interests and career goals, and the names and contact information for two references. Candidates may also specify the scientific methodologies or disease/organ systems that interest them. To review eligibility and for more information, go to:

<https://www.training.nih.gov/programs/sip>

Paul G. Cano Legislative Internship

This internship offers pharmacy students experience and training in federal and state legislative and regulatory advocacy, a chance to see firsthand how politics shape pharmacists practice across nation. To be eligible, a student must be a current pharmacy student enrolled in an accredited school of pharmacy. Applicants should have a strong interest in legislative and regulatory affairs. Preference is given to those applicants who have actively participated in one or more professional associations and who possess excellent organizational, written, and oral communication skills. The amount of award is \$4,000. Application items:

1. A one-page letter describing how the Cano internship fits in with your professional and academic goals
2. A resume or CV
3. Two letters of recommendation

The deadline is typically March 1 in a given year and the internship runs for eight weeks—from early June to early August with flexible start and end weeks. To review eligibility and for more information, [click here](#).

ASHP Summer Internship

The purpose of this opportunity is for undergraduate pharmacy students to learn more about membership development and marketing within a pharmacy organization. Also, the students will learn the reason why there are pharmacy organizations and to learn the importance of students and pharmacists being active within the organization whether it is at a local, state, or national level. Funding is available to a full-time student who is in good academic standing; completed their first year of pharmacy school; is active within professional organizations within the school or at other forms of organizations (church and other school organizations); and has been recommended by a faculty member; employer, preceptor, or Dean. A modest stipend for the nine-week period in the ASHP Headquarters Office will be given for 337.5 hours of paid training time extending over the period. Personal expenses, housing and transportation are the responsibility of the intern. ASHP will reimburse the intern for routine expenses associated with attendance at the Summer Meeting, including all transportation, meeting registration, and hotel for the five nights of the meeting. Application items include:

1. A resume (including phone number)
2. Two letters of recommendation from professional references (employer, pharmacy school faculty)
3. A 1-2 page cover letter indicating your interests in the summer internship

The deadline is February 1. To review eligibility and for more information, [click here](#).

NACDS-Howard Sternheim Summer Internship

The purpose of this internship is to enable the intern to have a better understanding of how the NACDS Foundation fulfills its mission of supporting programs that enhance the pharmacist's ability to provide patient care, key community pharmacy and patient care issues, and as well as a strong understanding of the role and value of community pharmacy and its ability to positively impact patient care in the health care system. Also, a complete list of learning objectives can be found at the Website below. Applicants must be enrolled full-time in an accredited US school or college of pharmacy and must have completed at least one professional year of pharmacy school before the internship begins. In addition, applicants must be in good academic standing and have chain community pharmacy experience. Application items include:

1. A completed online application form
2. A current resume or curriculum vitae
3. A cover letter explaining your career goals and interest in the NACDS-Howard Sternheim Summer Internship
4. One letter of recommendation from a pharmacy faculty member, dean, recent employer, or pharmacy mentor

The deadline is February 8. To review eligibility and for more information, go to:

<http://www.aacp.org/Pages/Default.aspx>

NIH Summer Internship Program

The purpose of this program is to provide an opportunity to spend a summer working side-by-side with some of the leading scientists in the world, in an environment devoted exclusively to biomedical research. This internship program is for high school, college,

graduate, dental, medical, and other professional students. The summer internship program is for students who will be sixteen years of age or older at the time they begin the program and who are currently enrolled at least half-time in high school or an accredited US college or university. The successful applicant needs the following information:

1. An official high school, college, or graduate school transcripts
2. Proof of US citizenship or permanent resident status

The amount of award is \$2,300 a month for a graduate student for one year and may be renewed. The amount is increased the longer the graduate student is in a graduate program.

Application items include:

1. Submission of a curriculum vitae or resume
2. Coursework and grades
3. A cover letter describing the applicant's research interests and career goals
4. The names and contact information for two references
5. Candidates may also specify the scientific methodologies or disease/organ systems that interest them

The deadline is typically March 1 on any given year. To review eligibility and for more information, go to:

<http://www.training.nih.gov/student/sip/index.asp>

Rite Aid Pharmacy Internships Program

The purpose of this funding is to teach students about pharmacy operations and prepare you to manage a pharmacy upon licensure as a pharmacist. Once the applicant has entered into the professional program at your school of pharmacy, they are eligible to enter the Rite Aid Intern program. Loan consolidation and repayment options through Edamerica, possible scholarship opportunities through Rite Aid, NPhA, and NACDS, and educational assistance for students by working closely with schools of pharmacy including West Virginia University School of Pharmacy. The amount of award: \$1,000 – \$5,000 from Rite Aid, other scholarships or loan repayments have different amounts that are tied to parent of scholarship or loan. To review eligibility and for more information, go to:

http://www.riteaid.com/careers/student_grad.jsf

FELLOWSHIPS

AACP Congressional Fellowship Program

This program, funded by the American Association of Colleges of Pharmacy (AACP), places qualified individuals from the fields of scientific, engineering, health, and others into the offices of individual members of Congress or Congressional Committees for one year. Although each assignment is different, each person will gain experience in the policy and legislative process of government, while contributing his or her own thoughts and ideas. Applicants must be an active member of AACP, have a terminal degree in their respective field, and hold an academic appointment as a faculty member in a college or school of pharmacy with an accredited program. Usually the applicant will be taking and/or eligible for sabbatical from his or her institution. The amount of the award is

\$10,000 plus \$2,500 per month for one year. Furnished housing is provided, along with travel and relocation up to \$2,000. Application items include:

1. Letter of intent
2. Summary of qualifications
3. A complete curriculum vitae
4. A letter from the dean or other university official describing the institution's time and financial commitment in support of applicant's participation

The deadline on any given year is December 1. To review eligibility and for more information, [click here](#).

AFPE Pre-doctoral
Fellowships in
Pharmaceutical
Sciences

This fellowship is funded by the American Foundation for Pharmaceutical Education and is intended to encourage outstanding pre-doctoral students to continue their studies and earn the PhD in the pharmaceutical sciences at a US school of pharmacy. Applicants must be students who have completed at least three semesters of graduate study toward the PhD and have less than 3.5 years remaining to obtain the degree in a graduate program in the pharmaceutical sciences administered by a US school of pharmacy. The applicant must be a US citizen or a permanent resident. This award is in the form of a stipend totaling \$6,000 per year

Application items include:

1. AFPE Pre-doctoral fellowship application signed by the Dean of the School of Pharmacy
2. A Statement of Recommendation and Evaluation Forms from three college faculty who are acquainted with the student's area of graduate study
3. Official transcripts of all collegiate grades

Deadline: Applications must be received by March 1 on any given year. To review eligibility and for more information, go to:

http://www.afpenet.org/pre_doc_grad_fellow.htm

AFPE-NACDS
Foundation Faculty
Development
Fellowship in
Community
Pharmacy

Funding for this fellowship is provided by the American Foundation for Pharmaceutical Education and is intended to provide a 6-month period (minimum) of advanced education, training, and research in community pharmacy practice to a full-time teaching faculty at a US school of pharmacy as well as increase the number of teaching faculty with experience in community pharmacy practice teaching/research. To be eligible, each candidate must have received the PharmD or PhD degree, be a full-time faculty at an accredited US school or college of pharmacy, have completed post-doctoral work in community pharmacy practice, agree to carry out the Fellowship on a full-time basis, provide a letter signed by his/her Dean and Department Chair guaranteeing that the applicant is relieved of all teaching responsibilities during the Fellowship, be a US citizen or permanent resident, and agree not to accept any other external funding. The support includes school of pharmacy faculty stipend and advanced education, training, and research support in the form of a \$25,000 stipend from AFPE that is matched by the applicant's institution for a total of \$50,000. Application items include:

1. Application (Part A to be completed and signed by the Fellowship Applicant and Part B to be completed and signed by the Fellowship Mentor)
2. Applicant's Curriculum Vitae
3. Applicant's Career Goals
4. Signed Fellowship Agreement by both the Applicant and Mentor
5. Mentor's Curriculum Vitae
6. Program Description
7. Fellowship Environment
8. Letter of Support

The deadline is April 1 on any given year. To review eligibility and for more information go to:

http://www.afpenet.org/Community%20Pharmacy_postpharm_fellow.htm

AFPE-RPS Inc.
Pharmacy Faculty
Fellowships in
Geriatric Pharmacy

The funding source for this fellowship is the American Foundation for Pharmaceutical Education (AFPE). The intent of this fellowship is to allow a Pharm D or PhD teaching faculty member to participate in a minimum six month intensive period of advanced education, training and/or research in geriatric pharmacy, and to further increase the number of faculty at school and colleges of pharmacy with the expertise in geriatric pharmacy. To be eligible, an applicant must have received a Pharm D. and/or PhD degree and have post-doctoral work in geriatric pharmacy and/or basic research. Applicant must agree to carry out fellowship on a full-time basis, provide a letter with application from his/her Dean assuring that the applicant will be relieved of all other duties, and that the institution will provide a minimum of \$25,000 in financial support. The applicant must be a US citizen or permanent resident, agree to not accept any other external fellowships, scholarships, or grants, and be able to provide evidence of acceptance for the fellowship training by a suitable mentor at a recognized academic institution. The support includes a stipend and direct grant to the faculty member. The amount of the award includes one (1) fellowship per year with a \$25,000 stipend from AFPE that is matched by the applicant's institution for a total of \$50,000. Application items include: Application forms and all supporting documentation such as letter from their dean noting that the applicant will be relieved of all other duties and a letter stating that the institution is providing the matching \$25,000 and acknowledgement of acceptable mentor. The deadline is April 7. To review eligibility and for more information, go to:

http://www.afpenet.org/Geriatric_postpharm_fellow.htm

Pfizer Fellowships in
Public Health

The Fellowship in Public Health is intended to support research that fosters academic science, knowledge of public health, and collaborative partnerships between accredited schools or programs of public health and federal, state, and local departments of public health. The aim is to prevent rather than treat a disease through surveillance of cases, promote healthy behaviors, and prevent disease transmission through prompt treatment and vaccination. In many cases, early treatment of a disease can be vital to preventing its spread to others. Funding must be used primarily as salary support for the selected fellow, not for overhead, indirect, or fringe costs. The institution cannot host another recipient of

this same award during the proposed term as an awardee. The selected fellow must have a doctoral degree and have held a junior faculty position as an instructor, assistant professor, or equivalent junior faculty rank for at least two years. The selected fellow will be employed in a US-based school of medicine, osteopathic medicine, nursing, pharmacy, or public health. At least 75% of the fellow's time will be devoted to research. The selected fellow must be a US citizen or foreign national with permanent US residence. Support will depend on the type of research. Funding for the Fellowship is paid to the awarded institution. Award payments are disbursed annually, typically during July, through the term of the award. The institution is responsible for administering the funds in accordance with its prevailing procedures and policies, and the stated conditions/stipulations of this Pfizer award. The amount of the award includes two awards of up to \$100,000, paid over two years at \$50,000 per year. Application items to be included are:

1. A project title
2. Abstract
3. Research proposal
4. Career development statement
5. Publication plan
6. A detailed description of the research mentoring process
7. Letters of support from the medical Department/Division Head/Dean of Research, CV/Bios, and mention of additional sources of financial support for the proposal, including current and pending sources of funding

The deadline date for this application is February 11. To review eligibility and for more information go to:

<http://www.pfizerfellowships.com/AwardDetails.aspx?AwardID=2264>

PhRMA
Pharmacology/
Toxicology
Post-doctoral
Fellowship

The aim of this fellowship is to support individuals engaged in multidisciplinary research training program that will extend their credentials in pharmacology or toxicology and to support candidates to gain new skills in pharmacologically relevant areas.

Eligibility requirements include a:

1. PhD degree or appropriate terminal research doctorate in the field related to the proposed post doctoral activities or
2. Receive a PhD before activating the award

Applicants must also have firm commitment from a mentor at an accredited US university and be a US citizen or permanent resident. Applications are to be submitted via the Foundation Website and received by scheduled deadline. The support comes in the form of an annual stipend in the amount of a \$40,000 annual stipend made out to the institution on behalf of the fellow. The award is intended solely as a stipend and may not be used otherwise. The indirect costs to the institution are not provided. Candidates must fill out an online application. Applicants must sign up for user account to review the actual application. The deadline is September 1 most years. To review eligibility and for more information, go to:

http://www.phrmafoundation.org/index.php?option=com_award&task=sdetail&id=8

NIH funding for a PharmD

The purpose of this opportunity is to fund and support research that improves the knowledge base of the living system and to reduce illnesses and diseases. The NIH encourages projects of high scientific caliber, investigator-initiated research, and unique research projects.

Eligibility extends to a wide range of individuals from pre-doctoral students all the way to individuals with extensive research experience. For a postdoctoral scholarship, the individual must be from an eligible institution and be a US citizen and must have a PharmD degree. For a pre-doctoral scholarship, the individual must be from an eligible institution, and they must have a baccalaureate degree and be enrolled in a PharmD program. The type of support includes grants and fellowships. The amount of award depends on the individual grant. They can range from \$25,000 for smaller grants all the way up to \$250,000. Rewards typically include a stipend, tuition and fees, and an institutional allowance. Applications are available on the NIH website. They have a planning section as well as all the necessary applications and forms which depend on the individual grant for which candidates are applying. Deadlines are variable depending on the individual grant. There are typically three cycles per year meaning that there are three different deadlines each year, but specific deadlines depend on the grant. To review eligibility and for more information, go to:

<http://www.nigms.nih.gov/Training/PharmD#funding>

AFPE Clinical Pharmacy Post-PharmD Fellowships in the Biomedical Research Sciences

This fellowship is designed to enable a PharmD-level clinical pharmacist to obtain advanced education, training, and expertise in relevant areas of the biomedical and related basic sciences in order to become a competent clinical scientist in academia, the pharmaceutical industry, institutional settings, or government able to create and maintain a prominent peer-reviewed research program and make major contributions to the biomedical and pharmaceutical sciences. A decided preference will be given to candidates who propose a fellowship away from their present affiliation. Applicants cannot be enrolled in a PhD degree program during the two-year period. The applicant must have received their PharmD degree within the past ten years (may also hold a B.S. and/or MS; but not an MD, DSc., or PhD). The applicant must have (or will have completed in the year the application is submitted) a postdoctoral clinical residency and/or clinical fellowship program of at least one-year duration. The applicant must agree to carry out the Fellowship on a full-time basis and will not engage in any part-time work. Sabbatical leaves may be accepted. If the applicant is a faculty member, he/she will provide a letter with his/her application with his/her Dean and Department Chair assuring that the applicant will be relieved of other responsibilities during the two-year Fellowship. The applicant must be able to provide evidence of acceptance for the desired postdoctoral training by a suitable mentor at a recognized academic/research institution not necessarily a college of pharmacy. Potential mentors will be judged solely by professional qualifications and experience. The applicant must be a US Citizen or Permanent Resident. This fellowship provides \$27,500 per year for up to two years. Application items:

1. Application Part A – to be completed and signed by the Fellowship Applicant, Application Part B – to be completed and signed by the Fellowship Mentor, Exhibit A – Applicant's Curriculum Vitae
2. Exhibit B – Applicant's Career Goals
3. Exhibit C – Fellowship Agreement to be signed by both the Fellowship Applicant and the Fellowship Mentor

4. Exhibit D – Mentor’s Curriculum Vitae
5. Exhibit E – Program Description
6. Exhibit F – Fellowship Environment
7. Exhibit G – Letter of Support

The deadline is mid-February most years. To review eligibility and for more information, go to:

http://www.afpenet.org/clinic_postpharm_fellow.htm

UNC Clinical
Pharmacokinetics/
Pharmacodynamics
Fellowship

The purpose of this fellowship is to provide knowledge and experience in pharmacokinetics and pharmacodynamics study design, data analysis, and related clinical drug research. Postgraduate research opportunities are provided through two-year Pharmacokinetic/Pharmacodynamic fellowships for both PharmD and PhD graduates. This award covers a stipend and health insurance. The amount of the award is unspecified.

Application items include:

1. A letter describing professional goals relating to the fellowship
2. A curriculum vitae
3. Three professional letters of reference

The deadline for this opportunity is early January. To review eligibility and for more information, [click here](#).

GRANTS

AACP New
Pharmacy Faculty
Research Awards

The American Association of Colleges of Pharmacy (AACCP) provides start-up funding for new pharmacy faculty’s research programs. Applicants must have both a PharmD, and a PhD and a full-time position as a professor’s assistant. The applicant cannot have started their position before July 1 of that year. Applicants are not eligible if they have previously received AACCP New Investigator Program for Pharmacy Faculty grant or any other pharmacy profession starter grants. Awardees may not receive the grant if they currently hold a position as principal investigator status on a federal agency grant. The awards will be given as grants in the amount of a \$10,000 grant along with \$1,000 for travel expenses to the AACCP Annual meeting and seminar.

Application items include:

1. The requested amount
2. An outline of research project
3. An approval by dean, and research support
4. A research narrative
5. Animal research approval letter
6. Human subjects research approval letter

7. Other supporting documentation as requested

The deadline for submission is typically on or about September 15 in a given year. To review eligibility and for more information, go to:

Website: www.aacp.org/career/grants/Pages/NewInvestigatorsProgramforFaculty.aspx

AHRQ

The Agency for Health Care Research and Quality's (AHRQ) mission is to improve the quality, safety, efficiency, and effectiveness of health care for all Americans. AHRQ fulfills its mission through establishing a broad base of scientific research to promote improvements in clinical and health system practices, such as incorporation of health information technology and recommended screening tests in everyday care delivery. Grants are available for Institutional-level and are designed to support the planning and development of health services research in traditionally minority-serving institutions and institutions in states which do not receive significant health services research funding. National Research Service Award (NRSA) grants to institutions for predoctoral and postdoctoral training. Individuals interested in obtaining pre/post-doctoral research training in HSR apply directly to specific programs of interest to them.

Application items include an online application through Grants.gov and includes:

1. Specific Aims
2. Background and Significance
3. Preliminary Studies and Progress Report
4. Research Design and Methods

To review eligibility and for more information, go to:

<http://www.ahrq.gov/>

APhA Incentive
Grants for
Practitioner
Innovation in
Pharmaceutical Care

Grants provided by The American Pharmacists Association Foundation and Knowlton Center for Pharmacist-Based Health Solutions aid in the implementation or continuance of an innovative patient care service within a particular community or ambulatory pharmacy. There are four categories to these incentive grants for 2011 including General Incentive Grant, Immunization Incentive Grant, Incentive Grant for Residents and Preceptors, and APhA-ASP Immunization Incentive Grant. To be eligible for the grant, the applicant must be an active member of APhA, a licensed pharmacist, and be engaged in the ambulatory or community pharmacy practice (Note: there is a particular grant that caters to student pharmacists which requires the student to simply be a member of APhA-ASP). A pharmacist must apply for the grant by sending in an application with a proposal describing their patient care service, and from there, APhA must review and determine which applicants will receive the grant. Also, it is required that grant recipients submit an interim report, final project report, and final expense report. These grants fund particular pharmacy patient care services. The General Incentive Grant, Immunization Incentive Grant, and Incentive Grant for Residents and Preceptors are all \$1,000 grants. The APhA-ASP Immunization Incentive Grant is a \$2,500 grant. APhA offers over 40 incentive grants annually. Those interested must submit an application form including, title and general project description, objectives and evaluation strategies to determine if objectives are met, project methods, timetable for project, and budget discussion

including total costs and justification of resources and costs. After the grant has been awarded, it is required to send in interim reports, final reports, and final expense reports. Applications are due on or about November 15. To review eligibility and for more information, go to:

http://www.pharmacist.com/AM/Template.cfm?Section=Incentive_Grants

ASHP Hospital
Pharmacist-
Emergency
Physician
Collaboration

The American Society of Health-System Pharmacists (ASHP) Foundation funds hospital pharmacists and emergency physicians conducting health services research to better the care of patients with infectious diseases treated in the emergency room. A hospital pharmacist and an emergency physician must partner together up to be the principal investigators.

This funding mechanism provides two \$50,000 grants. Each grant will be awarded to the research team of a hospital pharmacist and an emergency physician for use towards a specific practice-based study relevant to the care of patients with infectious diseases who receive care in the emergency department. One-third of the total grant will be provided upon execution of the award letter and submission of evidence of IRB approval or evidence of exemption from IRB review. One-third will be provided following receipt and ASHP Foundation acceptance of an interim research progress report and interim financial report submitted at the midpoint of the timeline for study completion. The remaining one-third will be provided upon receipt of a final research report that is due within 60 days of project completion. Facilities and administrative cost rates cannot exceed 8% of the total requested budget for direct expenses. Pharmacists and emergency physicians interested in applying for funding should refer to the request for proposals and application instructions when posted for full eligibility requirements and application procedures. Evidence that a hospital pharmacist and an emergency physician are collaborating must be present in the application process and grant progress reports. To review eligibility and for more information, [click here](#).

ASHP Pharmacy
Practice Resident
Practice-Based
Research Grant

The purpose of the ASHP Pharmacy Practice Resident Practice-Based Research Grant is to support practice-based research in medication use conducted by residents in ASHP-accredited pharmacy residency programs. Practice-based research includes program evaluation, patient education, patient outcomes and effectiveness of medication therapy, health care quality, and access to medications. A pharmacy resident in an ASHP-accredited residency program or a pharmacy resident in a residency program that has submitted an application for ASHP accreditation. A “senior investigator” must also be involved to serve as a mentor to the pharmacy resident. Research support for specific project (not intended for long-term research support). This grant will provide up to six \$5,000 grants are awarded (facilities and administrative cost rates that do not exceed 8% of the requested budget are also allowed). The applicant will need to complete:

1. An application form including project title
2. A project period dates
3. A total budget requested
4. Naming the sponsoring institution
5. A detailed budget
6. A budget justification

7. Study objectives
8. Equipment and facilities available
9. Rationale and anticipated significance to the selected grant category
10. Describe previous work related to the project completed by the resident applicant and his or her senior investigator (mentor)

The deadline for this is generally mid-October. To review eligibility and for more information, [click here](#).

ASHP Promoting
Influenza
Prevention:
Pharmacists as
Immunization
Advocates

The purpose the ASHP Promoting Influenza Prevention: Pharmacists as Immunization Advocates funding opportunity is to support projects that focus on the pharmacist's role in promoting the seasonal influenza vaccine. To be eligible, the principal investigator must be a licensed pharmacist with a strong research background. The proposed research must be presented to an institutional review board and the approval of the IRB must be received by the Foundation. The principal investigator or co-principal investigator must not already be receiving funding from ASHP Foundation. The study timeline must not be greater than 18 months. The amount of this research grant is \$25,000. Application items: Application form—including details of proposed project, and curriculum vitae for every investigator. To review eligibility and for more information, [click here](#):

NACDS Foundation
Awards to Pharmacy
Schools: Charitable
Grants

The purpose of these NACDS Foundation Awards to Pharmacy Schools: Charitable Grants are to support the public service and philanthropic organization that promote national health, support research and enhance the role of community pharmacy. Public service and philanthropic organization that focus on issues that deal directly with the well being of the patients cared for by community pharmacies, serve as the central organizational structure for the Foundation's outreach to children-both for ongoing programs and commitments, and provide support to organization having a broader reach in those areas community pharmacy serves. When applying, submit the request in writing on the organization letterhead. To review eligibility and for more information, go to:

<http://enyla.info/uncategorized/nacds-foundation-awards-to-pharmacy-schools-charitable-grants/>

NACDS Research
Grant Opportunities

Purpose: To improve medication use outcomes for patients served by community pharmacy in the United States. Applicants who will be considered must be involved with a School of Pharmacy University. The applicants most eligible are ones who show their passion towards research to impact the growth of community chain pharmacies. Amounts given may vary. Applicants are to express the amount requested for consideration within your proposal. Application items for this opportunity include:

1. A cover letter on your organization letterhead a brief description of the applying organization and the proposed program or project, as well as the amount requested
2. A brief background of your organization
3. A double-spaced proposal, not to exceed ten pages
4. A copy of your organization's IRS 501(c)(3) letter
5. A list of other supporters for your project

The foundation accepts proposals for research grants on a rolling basis, however approval is brought to the Board in late April or early December each year. To review eligibility and for more information go to:

<http://www.nacdsfoundation.org/WHATWEDO/RESEARCH/ResearchGrantOpportunities.aspx>

NCPA Research Grants

These grants provide seed funding to support community pharmacists for the purpose of establishing or improving activities and technologies pertaining to community pharmacy-based patient care, with a specific emphasis on pain management. NCPA research grants are available to pharmacy faculty, students, and practitioners wishing to perform research in areas dealing with independent pharmacy. Applicants for the current Catalyst Grant Award Program must be NCPA members who are currently licensed and active in independent pharmacy practice. Funding support includes a financial stipend; additionally the best projects will be widely communicated by NCPA to healthcare providers, policy makers, and patient and disease advocacy groups. Each grant provides \$3,000 to \$5,000 to support up to an 8-month project, plus up to \$1,500 stipend to attend the NCPA Annual Convention to participate in the award presentation. Application items include:

1. Completed application form and proposal project
2. Demonstrated ability to travel to the NCPA Annual Convention

Recipients of the grants must submit to the NCPA Foundation a brief mid-term project report, a final project report, and a final expense report. To review eligibility and for more information, go to:

<http://www.ncpafoundation.org/purdue.shtml>

National Center for Research Resources (NCRR)

The purpose of the NCCR Grant is to develop, validate, and standardize assays to measure HDL function and biomarkers for HDL function and to identify novel genes, pathways, and potential therapeutic targets in relation to HDL function. Those eligible for funding are: Higher Education Institutions, Non-profits Other Than Institutions of Higher Education, For-profit Organizations, Governments, Other, Foreign (non-US) components of US Organizations are allowed. Applicant organizations may submit more than one application, provided that each application is scientifically distinct. NIH will not accept any application in response to this FOA that is essentially the same as one currently pending initial peer review unless the applicant withdraws the pending application. NIH will not accept any application that is essentially the same as one already reviewed. Application budgets are not limited, but need to reflect actual needs of proposed project. Applicants requesting \$500,000 or more in direct costs in any year (excluding consortium F&A) must contact NIH program staff at least six weeks before submitting the application and follow the Policy on the Acceptance for Review of Unsolicited Applications that Request \$500,000 or more in Direct Costs as described in the SF 424 (R&R) Application Guide. It is critical that applicants follow the instructions in the SF 424 (R&R) Application Guide except where instructed to do otherwise (in this FOA or in a Notice from the NIH Guide for Grants and Contracts). Conformance to all requirements (both in the Application Guide and the FOA) is required and strictly enforced. Applicants must read and follow all application instructions in the Application

Guide as well as any program-specific instructions noted in Section IV. When the program-specific instructions deviate from those in the Application Guide, follow the program-specific instructions. Applications that do not comply with these instructions may be delayed or not accepted for review. To review eligibility and for more information, go to:

<http://www.ncrr.nih.gov>

Pharmacy Practice
Research Trust

The purpose of the Pharmacy Practice Research Trust funding is to promote and develop the field of pharmacy practice research. This practice research is meant to establish a scientific basis for the profession and provide the necessary information for future decisions on policy, practice, and service development. Applications for research that are looked highly upon include: the health of the public and the place of medicines, the right medicine for the right patient, preventing medication errors, medicines and the health of communities, and science, technologies, and medicines. To qualify for either the Sir Hugh Linstead Fellowship or the Galen Award, the applicant must be a member of the Royal Pharmaceutical Society of Great Britain. People currently undertaking preregistration training can be considered for these awards, but need to be part of the Pharmaceutical Society before they can receive funding. To be eligible, the research that is being undertaken must provide a benefit to the community pharmacy or the applicant must be a community pharmacist. The following groups of people are whom the grant is focused on: those requiring funding between PhD and post-doctoral grants, those requiring funding to go from MPhil to PhD, practitioners new to research and PhD students requiring research costs to enhance their PhDs. Support provided from this grant can be used to help with salary costs, locum costs, training course costs, appropriate academic supervision costs and research costs. A maximum of £10,000 for the Galen Award and a maximum of £45,000 are provided for the Sir Hugh Linstead Fellowship. For application requirements and additional information, view the Website at:

<http://www.pprrt.org.uk/ResearchFunding/2012ResearchAwards.aspx>

PhRMA
Pharmacology/
Toxicology
Research Starter
Grant

The purpose of this grant is to offer financial support to those beginning their independent research careers at the faculty level. This scholarship is focused in the areas of pharmacology and drug toxicology. Those who have the academic rank of instructor or assistant professor and investigators at the doctoral level and those with equivalent positions are encouraged to apply. The research must not be directly or indirectly subsidized to any significant degree by another grant. The applicant must be in a tenure track position for three years or less. Those who are in post-doctoral training may not apply. Applicants must be sponsored by the department from which they are applying and this department must be focused in pharmacology or toxicology. Applicants with multi-year national competitive awards or grants supporting their independent research will not be chosen. This grant is focused towards those beginning research in their field. The amount of award is \$60,000 for one year. There is no stipend and no more than \$500 per year may be used for travel or professional meetings. There is an online application and, when offered, the deadline is early January of each year. To review eligibility and for more information go to:

http://www.phrmafoundation.org/index.php?option=com_award&task=sdetail&id=17

Pharmacy Resident
Practice Based
Research Grant

The purpose of the Pharmacy Resident Practice Based Research Grant is to support practice-based research in medication use conducted by residents in ASHP-accredited pharmacy residency programs. Practice-based research includes program evaluation, patient education, patient outcomes and effectiveness of medication therapy, health care quality, and access to medications. To be eligible, the applicant must be a pharmacy resident in an ASHP-accredited residency program or a pharmacy resident in a residency program that has submitted an application for ASHP accreditation. A “senior investigator” must also be involved to serve as a mentor to the pharmacy resident. Support includes up to six \$5,000 grants (facilities and administrative cost rates that do not exceed 8% of the requested budget are also allowed).

Application items must consist of:

1. An application form including project title
2. Project period dates
3. Total budget requested
4. Sponsoring institution
5. A detailed budget
6. Budget justification
7. Study objectives
8. Equipment and facilities available
9. Rationale and anticipated significance to the selected grant category
10. Previous work related to the project completed by the resident applicant and his or her senior investigator (mentor)

The deadline is typically mid-late October on any given year. To review eligibility and other information, [click here](#).

LOANS AND LOAN
REPAYMENT

IHS Loan
Repayment Program

The funding source for this program is the Indian Health Service whose purpose is to encourage the recruitment and continued employment, service, and research of highly qualified health care professionals in order to supply to staffing needs of the Indian Health Service (IHS) or qualified Tribal programs. To be eligible, any health care professional that has a valid state license to practice or will be obtaining a license to practice can be eligible as long as they meet the following criteria: currently a US citizen, committed to practice at an ISH or other Indian health program priority site, can begin service on or before September 30 for two continuous years of full-time clinical practice, and either have a degree in a health profession, postgraduate training, or are currently in the final year of a health professional school. The applicant must also meet at least one of the following: eligible or hold an appointment as a commissioned officer in the Regular or Reserve Corps of the US Public Health Service Commissioned Corps, employed in an Indian health program without service obligation, are still in school but have a job offer from an Indian health program, or meet the professional standards requirement for Civil

Service employment in the IHS. This support is a repayment in exchange for a minimum two-year signing agreement. To be specific, the LRP awards up to \$20,000 per year in exchange for a minimum two-year service obligation, plus 20 percent of federal income tax on the award. The LRP withholds the employee's portion of FICA taxes. All the sections outlined in the NRP Application Handbook must be completed and submitted before the appropriate deadlines for applicants to be considered for scholarship.

Applications are accepted year-round from October 1 through September 30 with the Friday of the second full week of each month being the deadline for that month. Monthly evaluation of applications begins in January of each year. To review eligibility and for more information, go to:

<http://www.ihs.gov/JobCareerDevelop/DHPS/LRP/>

CAMC Pharmacy Education Loan Opportunity

The Charleston Area Medical Center (CAMC) sponsors a funding opportunity that will repay loans up to \$90,000 in return for five years of service as a Clinical Staff Pharmacist or Clinical Specialist. To be eligible, an applicant must be enrolled in a PharmD program and entering third or fourth year of pharmacy school, interested in working as a Clinical Staff Pharmacist or Clinical Specialist at CAMC for 5 years, make satisfactory progress in program as defined by the school, and a be US citizen. The sponsor will pay up to \$90,000.

The application items include:

1. Current resume or CV
2. One-page typewritten cover letter
3. Using a size 12-font, explaining your career goals, specifically your interest in practicing pharmacy in a hospital (Please communicate and provide specific examples that demonstrate why you are deserving of this opportunity)
4. Three reference forms completed by people not related to you
5. Official transcripts of coursework completed (includes undergraduate coursework)
6. A signed letter from the School of Pharmacy that confirms you are progressing satisfactorily academically, as defined by the school, which also confirms your academic year

The deadline for this funding is typically early March of a given year. To review eligibility and for more information, go to:

<http://www.camcinstitute.org/pharmacy/loan/default.htm>

Minnesota Rural Pharmacist Loan Forgiveness Program

The purpose of this funding is to recruit and retain health care professionals to needed areas and facilities within Minnesota. This program targets pharmacy students, residents or licensed pharmacists who plan to practice for at least 30 hours per week—for at least 45 weeks per year, for a minimum of three years in a designated rural area. Applicants are responsible for securing their own educational loans. Qualified loans for repayment include government, commercial, and foundation loans for actual costs paid for tuition, reasonable education and living expenses related to the graduate or undergraduate education of a health care professional. The loan repayment includes up to four years of

loan forgiveness. The amount of the award is \$16,000 annually, up to \$64,000 total for the maximum four-year period, or the balance of the designated loan(s), whichever is less.

The application items include:

1. Personal demographic information
2. Current position
3. School and training
4. References
5. Purpose and essay

The application cycle is July 1-December 1. To review eligibility and for more information, go to:

<http://www.health.state.mn.us/divs/orhpc/funding/loans/pharm.html>

NCPA Student Loan Program

The purpose of this program is to provide educational and research support to pharmacy faculty, students, and practitioners and to assist future professionals through the provision of scholarships and low-interest rate educational loans. The awardee must be a member of NCPA and enrolled in an accredited school of pharmacy on a full-time basis. Applicants must have a cumulative GPA of at least 2.5 and be a US Citizen. First-year students in their first semester are not eligible. For students completing the first semester of their first professional year, the application will be held open until an Official Transcript for the first professional semester is received. Note: Receipt of the loan payment could be delayed until after the second semester begins. Applications are not available for summer sessions.

The amount of this low interest student loan is a maximum amount of \$2,500 per semester and \$5,000 per year, depending on tuition and book fees. A maximum of \$17,500 total is awarded. Interest rate based on prime + 0.5, which accrues annually beginning 90 days after graduation. Application items include:

1. An application form
2. Transcripts
3. Billing statement for tuition and books

The deadline is typically mid-November most years. To review eligibility and for more information, go to:

<http://www.ncpafoundation.org/educational-loans.shtml>

NIH Post-Graduate Student Loan Repayment

The purpose of the NIH Post Graduate Student Loan Repayment Programs are a vital component of United State's efforts to attract health professionals to careers in clinical, pediatric, health disparities, or contraception and infertility research. Applicants must have a MD, PhD, PsyD, PharmD, DO, DDS, DMD, DPM, DC, ND, or equivalent doctoral degree from an accredited institution. An applicant's research must be funded by US government or any non-profit firm. Applicant has to be US citizen or permanent resident. Your educational debt—from qualifying types of student loans—must equal at least 20 percent of your "institutional base salary." Institutional base salary is that paid by the institution where you are conducting research. NIH LRPs are not available to full-time

federal government employees. In exchange for a two or three-year (for Intramural General Research) commitment to your research career, NIH will repay up to \$35,000 per year of your qualified educational debt. In addition, the NIH will make corresponding federal tax payments for credit to your Internal Revenue Service tax account at the rate of 39% of each loan repayment to cover your increased federal taxes. The NIH may also reimburse any increased state or local taxes and/or additional increased Federal taxes (where the federal tax payments were not sufficient to fully cover your increased Federal taxes) that you incur as a result of your LRP benefits. Application information includes:

1. Personal information
2. A description of the current or proposed research project including your specific responsibilities and role in conducting the research
3. A description of facilities and research environment
4. A career development plan
5. A description of research accomplishments

The application is available online from September 1 until December 1st of each year. To review eligibility and for more information, go to:

<http://www.lrp.nih.gov/>

MISCELLANEOUS (EQUIPMENT, TRAINING, AND PROGRAMS)

Defense University
Research
Instrumentation
Program (DURIP)

DURIP is designed to improve the capabilities of US institutions of higher education (hereafter referred to as “universities”) to conduct research and to educate scientists and engineers in areas important to national defense, by providing funds for the acquisition of research equipment.

This announcement seeks proposals to purchase instrumentation in support of research in areas of interest to the Department of Defense (DoD), including areas of research supported by the administering agencies. The research areas of interest for the administering agencies are available online at the following addresses:

- **Army Research Office:**
<http://www.arl.army.mil/www/default.cfm?page=8>
(select “For the Researcher” and then “Funding Opportunities”) See BAA W911NF-07-R-0003-03 US Army Research Office BAA FY 2007 – 2011.
- **Office of Naval Research:**
<http://www.onr.navy.mil/>
(select “Technology Locator” or the individual Department Codes).
- **Air Force Office of Scientific Research:**
<http://www.wpafb.af.mil/library/factsheets/factsheet.asp?id=8981>
U (select “AFOSR BAA 2010-1” at the bottom.)

For detailed information regarding technical goals, potential proposers are advised to refer to the on-line sites cited above and are encouraged to contact DoD program managers listed at those sites to explore mutual interest before submitting proposals. A proposal may be submitted to more than one agency; however, only one award will be given.

A central purpose of the DURIP is to provide equipment to enhance research-related education. Therefore proposals must address the impact of the equipment on the institution's ability to educate students, through research, in disciplines important to DoD missions.

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Common Institutional Forms and Details

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The Electronic Blue Sheet (EBS)

THE EBS LOG-IN PAGE:

Office of Sponsored Programs

Electronic Blue Sheet (EBS) System Login

Username

You must use your Master ID to login

Password

Questions? Contact OIT Help Desk online, by email or at 304-293-4444 or toll-free at 1-877-327-9260

Supported Browsers

Forgot your MasterID Username or Password?

Login

1. Sign in here using your Master ID and password

2. Once you sign in, click here to login

Contact OIT if you have problems accessing your EBS Page

PERSONAL SUMMARY EBS PAGE ONCE LOGGED IN: "MY EBS"

Office of Sponsored Programs

My EBS rlevelle-hsc Logout

My EBS

Search Display 15 Status All Go Reset

Project	EBS Status	Sponsor	Project Type	Submitted	Updated
New Project Creator: Randall Levelle	Editing	-	-	-	-
Yr 5-Novel Pharmacologic Inter Creator: Randall Levelle	Submitted to OSP	UNIVERSITY OF MISSISSIPPI-OFC OF RES & SPON PROGRAMS	Research and Development	2011-03-30	2011-04-05 03:17pm
NIH-COBRE Matsumoto SoP Creator: Randall Levelle	Submitted to OSP	NIH	Research and Development	2011-01-28	2011-02-03 08:43am
T32 - Pharmacological sciences Creator: Randall Levelle	Submitted to OSP	US Dept of Health and Human Services-NIH-NIDA	Instruction and Training	2011-01-19	2011-01-20 10:43am
ζ-active cocaine antagonis Creator: Randall Levelle	Withdrawn by Investigator	US Dept of Health and Human Services-NIH-NIAD	Research and Development	-	2011-01-05 03:00pm

1 - 5

Click here to access a proposal "in progress"

Click here to start a new project/proposal sheet

Your projects/proposals and their status

INDIVIDUAL PROPOSAL STATUS PAGE

Office of Sponsored Programs

My EBS rlevelle-hsc Logout

My EBS > Overview: New Project

EBS Quick Information

OSP # Not Assigned

Reviewer Not Assigned

Status Editing

Created By Randall Levelle

Continue Editing EBS

Start a New EBS
Using This One as a Template

Print My Bluesheet

Withdraw Proposal

EBS Validation Report

This EBS has one or more required fields that have not been filled in. A yellow asterick indicates a section where a required field has been left blank. Click "Expand" on each section for a list of items that need to be resolved.

- One of Project Location or Off-Campus Location must be specified
- You have not identified all Research Trust Fund Areas as applicable or not (0 of 7)
- Principal Investigator Rae Matsumoto
Needs to have a percentage of effort assigned
- You must upload a Detailed Proposal Budget document.

EBS Details: New Project Expand All Collapse All

✳ Project Information (0 of 13)	Expand	Edit
✓ Investigators (1 PIs, 0 Co-Is)	Expand	Edit
✳ Regulations And Compliance (0 of 10)	Expand	Edit
✳ Budget Information (0 of 14)	Expand	Edit
✳ Policy Checklist (0 of 3)	Expand	Edit
✳ Award And Return Information (0 of 4)	Expand	Edit
✳ Deadline Information (0 of 10)	Expand	Edit
✳ Approval Agents (0)		Edit
Supporting Documents (0)		List

Quick view status of the proposal project page that is currently open

Click on one of these items to initiate an action on your open proposal

Provides a "heads-up" to the PI regarding missing information or other requirements needed to complete their proposal

Components of the EBS to be filled-out. If you need information about how to fill out each of these sections, contact your Grants Administrator

Expands an individual EBS section for review

Allows the PI to add or revise information in the EBS section selected



Helpful Hint: After filling out the forms on the EBS and successfully passing the "Validations Test," you may officially initiate your proposal in the review and approval process. However, **before** you click the button to initiate this action, contact Valerie Lemasters at vlemasters@hsc.wvu.edu and request that she perform a cursory review of your application package. Why is this important? Her office is the final point of review before transmittal to the WVU OSP and she has the ability to access and view your EBS proposal at any time. When you are progressing through your proposal's official review and approval process, each approver in the review chain has the option of "not approving" your proposal package. Should this occur, you must start your entire review and approval process from the beginning. By allowing Ms. Lemasters at the Office of the VP at HSC to conduct the aforementioned cursory review, most common errors in your proposal package will be caught. This will streamline your review/approval.

WVU SPONSORED PROGRAMS APPLICATION APPROVAL SHEET (BLUE SHEET SUMMARY FROM YOUR COMPLETED EBS: SAMPLE)

Key People

Project Budget & Length

School Finance Contact

Required Signatures for Approval

General Project Info

Compliance Questions

Agency Contact Info

West Virginia University and WVU Research Corporation Sponsored Programs Application Approval Sheet						OSP# No. 08-545
Failure to Complete All Fields Will Result in Delay of Proposal Review While Form is Returned to PI For Completion						ROADS DATE:
In Order to Guarantee Submission, Proposal Must be Submitted to OSP's Business Days Prior to Agency Deadline						
1. Principal Investigator/Project Director Name (First, Middle, Last)		Degree	Academic Rank / Administrative Title	ISS#		% Effort
Rae, Matsumoto		Ph D	Associate Dean			10
2. College and Department		PO Box	Phone	Fax	Email	
School of Pharmacy Basic Pharmaceutical Sciences		PO Box 9500	304-293-5101	304-293-5483	rmatsumoto@hsc.wvu.edu	
3. Co-investigator and Academic Rank or Admin. Title			Co-investigator's College/Department		% Effort	
4. Project Title (absolute limit of 240 characters) Novel Pharmacologic Interventions for Drugs of Abuse						
5. Short Title (absolute limit of 30 characters) Yr 5-Novel Pharmacologic Inter				Sponsor UNIVERSITY OF MISSISSIPPI-OPC OF RES & SPON PROGRAMS		
6. Deadline Date: 03-31-2011 (as specified by agency)		Number of Agency Copies Requested: 0		Lead Organization (WVU or other - please specify): WVURC /WVU		
Deadline Type Other: Electronic Submission (Email)						
7. Project Type: Research and Development			8. Project Status: Non-competing Renewal			
9. Investigators had responsible conduct of research ethics training? Yes			10. Does the project involve human subjects? No			
11. Does the project involve biohazards? No			12. Does the project involve live vertebrate animals? Yes ACUC #: Pending			
13. Does your project involve radiation or radioactive materials? No						
14. Estimated Project Dates		First/Current Year: 04-01-2011	Finish: 03-31-2012	Total Project Period (all years)	Start: 03-15-2007	Finish: 03-31-2012
		Agency Costs		Cost-share **		
15. First or Current Year:		Direct Costs \$105,791.00	F&A Costs* \$49,722.00	Total Costs \$155,513.00	Dept/College \$0.00	Other \$0.00
Total Project Period:		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
		F&A * Percentage Used: 46.5 %				
* Unless facilities and Administrative (F&A) costs are specifically limited or prohibited by written sponsor policy, reduction and waivers of F&A costs must be approved, in writing, well in advance of OSP proposal approval. Provide a copy of sponsor's written policy regarding F&A.						
** Requester provide detailed budget for any cost sharing proposed and an approved letter from each appropriate institution or official authorizing the cost shared funds. If awarded, you must provide OSP with accounting information for cost-sharing before funds can be made available.						
16. If funded, will this project involve more than one task that requires its own budget? No						
17. Project Location (On-Campus, room # or address): Room 2037-D HSC, North						
18. Mailing Information: Electronic Off-Campus Location: If sending via FedEx, provide AirBill with FedEx account number completed.						
19. Have you filled out an annual WVU Disclosure of Conflict of Interest form for the current calendar year as required by the WVU Conflict of Interest Policy? No						
20. Has the topic of export control come up in any form in connection with this proposal? No						
21. Will your project involve any communication with U.S. embargoed countries or their citizens? No						
22. Will your project require the shipment of equipment outside the U.S.? No						
23. Are there any restrictions on university investigator publication or intellectual property rights? No						
24. Is the proposed activity a fixed-price, commercially sponsored activity? No. If yes, please complete the attached Supplement Form B. http://orc.research.wvu.edu/download/1817						
25. Does the project involve one or more subcontracts? No						
26. Does the project require space or utility alterations or additions? No						
27. Financial administrative unit for award: WVU School of Pharmacy EBO						
28. Business Office Award Manager: Kathleen Anford						
29. Facilities and Administrative Return % (primary department) % (other department)						
30. Is this project the result of Congressionally Directed Appropriation? No						
Certification						
The undersigned investigator(s), chair(s) and dean(s) acknowledge approval of this proposal and its use of university personnel, facilities and students. If applicable, the undersigned signify approval of the proposed distribution of funds as indicated in Supplement Form A.						

installation, remodeling, extra operating funds, nor for the establishment of new organizations, courses, curriculum, or faculty positions, and that any such commitments contained in this project have been approved in advance as represented by the signatures below:

Approvals			
Name	Status	Comment	
Rae, Matsumoto Approver Role: Principal Investigator Rank/Title: Associate Dean Email: rmatsumoto@hsc.wvu.edu Phone Number: 304-293-5101	Approved 30-MAR-11 01.21.02:00:1648 PM	ACUC protocol approved February 11, 2011 (protocol #11-0104) Project involves radioactive materials F&A percentage was 47% Project locations also include: Emma Byrd Biomedical Research Building second floor; Health Science Center South rooms 5d12 and 5d05	
Peter Gannett Approver Role: Dept/Division Chair Rank/Title: Associate Chairperson Email: pgannett@hsc.wvu.edu Phone Number: 304-293-1400	Approved 30-MAR-11 01.30.09:209144 PM		
Patricia Chase Approver Role: Dean/Director Rank/Title: Dean Email: pachase@hsc.wvu.edu Phone Number: 304-293-5101	Approved 30-MAR-11 10.03.44:016763 PM		
Valerie Lemasters Approver Role: Grants Administration (Dean's Level) Rank/Title: Employee UHA Email: vlemasters@hsc.wvu.edu Phone Number: 304-293-1246	Approved 30-MAR-11 03.13.11:07:915 PM		

32. Notes and/or Special Instructions: Claire's email address to send this is: <vrsp@olemiss.edu>

Scientific contact to:
Christopher R. McCurdy, Ph.D., R.Ph.
DAC Distinguished Teaching Scholar
Associate Professor of Medicinal Chemistry and Pharmacology
Department of Medicinal Chemistry
School of Pharmacy
419 Faser Hall
The University of Mississippi
P.O. Box 1040
University, MS 38677-1948
Office: (662) 915-5882
Lab: (662) 915-1033
Fax: (662) 915-5938

33. Agency Address (required for OSP transmittal letter):
Recipient's Name: ALICE M. CLARK
Phone Number: 662-915-7583
Organization: DIRECTOR OF SPON PROG ADMIN-UNIVERSITY OF MISSISSIPPI
Address Line 1: OPC OF RES & SPON PROGRAMS
Address Line 2: 100 PARR HALL, PO BOX 507
City: UNIVERSITY | State: MS | Zip: 38677



WVU OSP Award Notification (Green) Sheet

WEST VIRGINIA UNIVERSITY RESEARCH CORPORATION AWARD NOTIFICATION OFFICE OF SPONSORED PROGRAMS

Principal Investigator: Dr. Suresh Madhavan
POB 9510

OSP Ref. No.: 05-333A

Co-Investigator/Task Managers:

Dr. Jame Abraham	POB 9162
Dr. Rachel Abraham	POB 9190
Dr. Joel Halverson	POB 9150
Dr. Gerry Hobbs	POB 6330
Dr. Dina Jones	POB 9196
Dr. Anoop Shankar	POB 9190
Dr. Steve Small	POB 9510
Dr. Michael Smith	POB 9150
Dr. Cindy Tworek	POB 9150

Date: 9/30/2009

Function: 202/151

Fund: 71609758
71609761

Expenditure Organization Name(s): PSP Sponsored Programs

Project Title: The West Virginia CoHORTS Center

Sponsoring Agency: U.S. DHHS/Agency for Healthcare Research & Quality

Budget Period: From: 9/30/2009 To: 7/31/2010

Award: \$ 352,387 (Direct Costs) Grant/Contract No.: 1 R24 HS018622-01
\$ 146,755 (F&A Costs)
\$ 499,142 (Total Award) F&A Rate Applied: 31.5% & 46.5%

Cost Sharing Required: Yes No; Description: _____

Explanatory Remarks: Please note: No expenditures may be made that involve the use of human subjects until the project has been reviewed and approved by the IRB, and a certification submitted and accepted by the sponsor.

Project: 10013104 Task: 1 (Infrast) Award: 1004776R Amount: \$149,952
10013104 2 (Project 1) 1004776AR \$257,335
10013104 3 (Pilot Proj) 1004776AR \$91,855

Award Distribution:

Dean/Director	Department Chairperson
Dean Patricia Chase	Dr. Rae Matsumoto
HSC Research Office	Dr. Scot Remick
Interim Dean Dr. James Brick	Dr. Alan Ducatman
	Dr. Sanford Emery
Dr. Curt Peterson	

Environmental Health & Safety

For internal Guidelines & Policies - refer to WVURC Project Management Guide (www.wvu.edu/~finance/control/fminfo/ctrl1.htm)

For Sponsor Guidelines & Policies contact the Office of Sponsored Programs

Questions regarding this form contact Donna Leary @ 293-3998

PI and other key Personnel

WVU OSP Assigned Project Number

Project Title, Duration, and Funding Source

Budget and Finance Information

WVU Account Number Establishment

Note: this is a cover page only. The rest of the Award (Green Sheet) package typically contains an award letter from the funding agency, the budget, and any special terms and conditions.

Finance and Budgeting Information: Sponsored Projects

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Pre-Award Financial Information

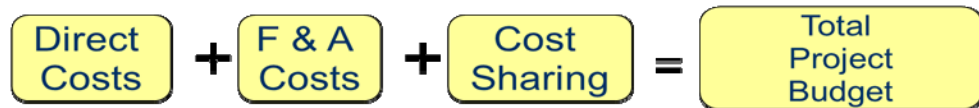
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DEVELOPING A PROPOSAL BUDGET

Part of developing your proposal is developing your budget and identifying costs, but what makes up a budget proposal? Here are the costs to consider:



Your proposal budget is a categorical list of anticipated project costs that represent the Principal Investigator's best estimate of the funds needed to support the work described in a proposal. We will address each component later in this section. First, let's look at costs and what makes them possible. When the PI submits a proposal he/she must ensure that each cost is **allowable**. But what makes a cost allowable in the eyes of most funding agencies?

Allowable Costs

The **allowability** of cost must meet certain criteria. Is the proposed cost or charge:

- **Reasonable** and **necessary** for the performance of the program and able to withstand public scrutiny
- **Allocable** to the proposed sponsored project earmarked solely to support the work of a specific project or in proportion to the benefit derived
- Given **consistent** treatment—in other words, the way the University classifies and manages one project must be the same

In general, costs must also **conform** to any limitations or exclusions set forth in OMB Circular A-21 for federal funding or in the sponsored agreement as to types or amounts of cost items.

This information is important because now we'll talk about what makes a cost unallowable.

Unallowable Costs

An unallowable cost is any cost or expense charged to a grant or contract that is prohibited by Federal or State Law, University Policy, and/or sponsor guidelines. You can be sure that a sponsored funded cost is unallowable if it meets the following criteria:

- Alcoholic beverages
- Entertainment
- Fund raising
- Alumni events

Types of Costs

Now that we know what costs are and what makes a cost allowable let's revisit the types of costs (direct, indirect, and cost share):

Direct Costs have the following characteristics:

Direct Costs

- Identified specifically with a particular sponsored agreement
- Incurred to advance the work under that sponsored agreement
- Incurred to advance the work under that sponsored agreement
- Assigned to that sponsored agreement with relative ease and a high degree of accuracy

Direct Costs in a proposal generally contain the following components:

- Salary projections and time commitment
- Fringe benefits and rates
- Equipment
- Travel
- Contractual
- Other direct costs

F & A Costs

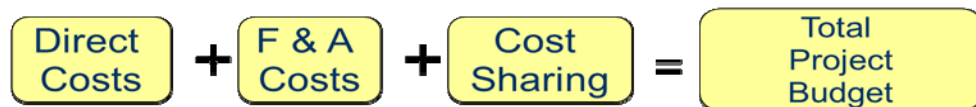
Facilities and Administrative (F&A) Costs are a percentage charged against the direct costs that goes to the University. (See later on in this document for current rates at WVU.) F&A costs (also called indirect costs) are the costs associated with providing facilities and administrative support to conduct research and other sponsored activities and are necessary if faculty and staff are to be successful in their efforts.

These real costs of a University are not readily identifiable with a particular project or activity, but are necessary to the general operation of a University and the conduct of its activities. Charging this F&A rate helps a University recover these costs. They include the costs of operating and maintaining buildings and grounds, equipment, the libraries, and of providing administrative support at the university, college and department levels. Contact your grants administrator for help when calculating direct costs that are exempt from F&A charges.

Cost Sharing

Cost share are those funds or value of resources that are forwarded by a group that wants to be funded. In short, any portion of the total costs of a project or program not borne by the sponsor (OMB Circular A-110). Within the SoP, several things must be considered when incorporating Cost Share in a proposal budget. Cost Share:

- MUST BE APPROVED BY THE DEAN (In writing)
- Cannot be committed as cost sharing on any other project or program
- Must be directly related to the project objectives
- Must be incurred during the award period
- Must be allowable and allocable under the federal cost principles
- Are **LEGALLY** binding commitments that must be fulfilled
- Subject to **AUDIT** and must be tracked during award period
- Must be verifiable from institutional documents



Post-Award Financial Information

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SAMPLE MONTHLY PROJECT FINANCIAL REPORT

REPORT-PH [REDACTED] USE								
ORACLE [REDACTED] 11854: A [REDACTED] 7R: Task-1								
OSP: [REDACTED]								
Budget Period: 04/01/08 to 03/31/12								
EXPENDITURES THROUGH 1/31/10								
		A	B	C	D	E	F	
					B+C		A-(D+E)	
		BUDGETED	TOTAL	TOTAL	TOTAL	PROJECTED	PROJECTED	
LINE ITEM		AMOUNT	COMMITTED	EXPENDED	ENCUMBERED AND	THROUGH PROJECT	BALANCE (+/-)	
			(ENC)		EXPENDED	END		
Personnel								
	Benefit Eligible & Annual Incr	104,026.00	0.00	0.00	0.00	0.00	104,026.00	
	BE Non Classified Staff	0.00	21,570.65	85,508.39	107,079.04	0.00	(107,079.04)	
	Grad Assts Fellows	48,000.00	0.00	0.00	0.00	0.00	48,000.00	
	STD Grad & Research Assistar	0.00	10,541.71	24,916.58	35,458.29	0.00	(35,458.29)	
	TOTAL PERSONNEL	152,026.00	32,112.36	110,424.97	142,537.33	0.00	9,488.67	TOTAL PERSONNEL
Fringe								
	Fringe Benefits	31,496.00	0.00	0.00	0.00	0.00	31,496.00	
	FB Grant Fr Reim Benefit Elig	0.00	5,608.35	21,620.00	27,228.35	0.00	(27,228.35)	
	Unclassified	0	653.62	1,692.38	2,346.00	0.00	(2,346.00)	
	FB Grant Fr Reim Grad Std	0.00	0.00	0.00	0.00	0.00	0.00	
	TOTAL FRINGE	31,496.00	6,261.97	23,312.38	29,574.35	0.00	1,921.65	TOTAL FRINGE
General Expenses								
	General Expenses	44,666.00	0.00	0.00	0.00	0.00	44,666.00	
	Ge Exp Office Expense	0.00	0.00	50.63	50.63	0.00	(50.63)	
	Ge Exp Postage & Freight	0.00	114.80	466.25	581.05	0.00	(581.05)	
	Ge Exp Res & Ed Sup & Ser	0.00	1,075.20	23,152.10	24,227.30	0.00	(24,227.30)	
	TOTAL GENERAL EXPENSES	44,666.00	1,190.00	23,668.98	24,858.98	0.00	19,807.02	TOTAL GENERAL EXPENSES
Travel								
	Travel	3,000.00	0.00	0.00	0.00	0.00	3,000.00	
	Travel Foreign	0.00	0.00	599.84	599.84	0.00	(599.84)	
	Travel Within USA Not WV	0.00	0.00	4,538.92	4,538.92	0.00	(4,538.92)	
	TOTAL TRAVEL	3,000.00	0.00	5,138.76	5,138.76	0.00	(2,138.76)	TOTAL TRAVEL
F and A Cost Reimbursement								
		107,502.00	18,397.45	72,574.47	90,971.92	0.00	16,530.08	TOTAL F&A
	GRAND TOTALS	338,690.00	57,961.78	235,119.56	293,081.34	0.00	45,608.66	GRAND TOTALS

Note: an attachment to this cover sheet should include an expenditure report for the current month the report represents—broken out by line item and tasks—and totaled by project. Also in a separate section, each individual transaction for that month should be listed separately in a more detailed transaction report. This attached report must also include a breakdown of all current encumbrances and, if available, a breakout of all expenses, by line item, anticipated through project end. Except for projected future expenditures, all of the information needed for this report, including the information above, may be accessed on the University ORACLE MAP (Mountaineer Administrative Processes) system. To learn how to generate these reports or to request reports, contact the SoP Business Office.



Subcontract vs. Consultant: What's the Difference?

Most of the sponsored research awards granted to West Virginia University are carried out within the boundaries of the University (i.e. Morgantown, Charleston, or WVU IT campus). However, as federal funding agencies have started to focus more on collaborative research, it is becoming more common to see the involvement of outside entities with sponsored projects. When necessary, substantive work can be subcontracted to one or more institutions outside of West Virginia University to conduct specific programmatic activities for a sponsored project.

By definition, a subcontractor conducts project activities that are a primary purpose of the research program which, for whatever reason, are not conducted at the University. These activities should constitute a significant portion of the research program and require the leadership and direction of a responsible co investigator located at the work site of the cooperating institution. Substantive work usually encompasses any one or more of the following: personnel costs, supplies, equipment, travel, and F&A costs needed by a third party. Consultant work is usually more limited in scope and not as important in determining the success or failure of a project.

Any activity not meeting the definition of a subcontract should be handled via a service agreement. Information regarding service agreements is available on the WVU Procurement Website at: <http://www.wvu.edu/~finance/business/procurement.cfm>

Proposal Stage

OSP prefers that subcontractors be named in proposals, which should also include a scope of work and detailed budget for the work proposed to be conducted by the collaborating institution. A letter of support from the collaborating institution is also required for most funding agencies.

It is important to determine whether the work should be classified as a subcontract or a service agreement at the proposal stage in order to determine F&A costs correctly. Subcontractor costs are included in WVU's budget as a direct cost; therefore WVU will assess indirect costs on the first \$25,000 of each subcontract on all new awards. Subcontracts budgeted on awards that assess WVU F&A on a Total Direct Cost (TDC) are subject to WVU F&A on the full amount of the subcontract, not just on the first \$25,000.

In order to determine whether or not the work proposed to be conducted by a collaborating institution should be a subcontract or a service agreement (consultant), please complete the OSP Checklist For [Determination of Vendor or Subrecipient](#) <http://osp.research.wvu.edu/r/download/22726> and provide along with your proposal to OSP. Upon OSP's review of the completed questionnaire, if the work is determined to be a subcontractor, [Supplement Form C](#) <http://osp.research.wvu.edu/r/download/22727> needs to be completed with the WVU/WVU RC Sponsored Programs Application Approval.

Post-Award

When a sponsored project with a subcontract is awarded to WVU/WVU RC, OSP will work with the PI to establish a formal agreement with the collaborating institution named in your award. If it has not already been provided in the application, OSP will need a detailed statement of work specific to the activities of the subcontractor, a line item budget, and contact information for the subcontracting organization. If the subcontractor has not been named in the award, then the PI must work with WVU Procurement for a sole source justification.

Once OSP receives the above-referenced information, it will move forward to issue a subcontract based on the appropriate flow down terms and conditions from the prime award. The document will be sent to the subcontracting organization for review and approval.

When the subcontractor returns the signed agreement, it will then be signed by either WVU or WVU RC and OSP will enter a requisition into the MAP system. Copies of the signed document and requisition are sent to the PI and his/her business office. Original documents are forwarded to WVU Procurement for the issuance of a purchase order.

Once the subcontract is established, it is up to the PI to monitor the technical work and review the invoices. Acceptable invoices should be forwarded to the PI's business office for payment.

Throughout the subcontracting process subrecipient monitoring must take place. A copy of the OSP [Subrecipient Monitoring Policy](http://osp.research.wvu.edu/r/download/22728) <http://osp.research.wvu.edu/r/download/22728> is available.

Office of Research Integrity Compliance: Legal, Regulatory, & Compliance Components

The Office of Research Integrity and Compliance (ORIC) is committed to helping faculty, staff, and students comply with all applicable federal, state, and institutional requirements and policies. Research integrity and compliance areas covered by this office include Human Subjects Protections, Animal Welfare, Biosafety, Conflict of Interest, and Responsible Conduct of Research. These pages will provide information on policies and procedures, guidelines, educational programs, and monitoring and accountability in these areas. Information may be accessed at:

<http://oric.research.wvu.edu/>

Protection of Human Subjects

The two WVU Institutional Review Boards for Protection of Human Research Subjects (IRB) ensure that human subject research at WVU is appropriate and conforms to federal regulations. Information may be accessed at:

http://oric.research.wvu.edu/human_subjects_research_and_the_irb

Animal Welfare

The Animal Care and Use Committee (ACUC) ensures that vertebrate animal use at WVU is appropriate and conforms to federal regulations. Information may be accessed at:

<http://oric.research.wvu.edu/animal>

Radiation Safety

Radiation Safety Services, along with members of the Human Use, Non-Human Use and Radiological Safety Committees, is committed to the ongoing development and implementation of the current radiation safety program that includes WVU Campuses, the Robert C. Byrd Health Sciences Center, and WVU Hospitals Inc., for all research activities involving the use of radioactive materials, radiation producing devices, and/or the diagnostic or therapeutic use of radiation in humans, non-humans and or animals. In managing this program, Radiation Safety Services staff will provide guidance and enforcement to guarantee the safe handling and use of radioactive materials and radiation producing machines, and provide a safe environment for faculty, staff, students, and visitors within WVU and WVUH facilities.

Projects involving the use of radioactive material must be reviewed and approved by the Radiological Safety Committee before any materials can be ordered and work begun. University policy also requires training for personnel, which must be completed before a project utilizing radioactive material can start.

Any further questions pertaining to policy and procedures can be answered by referring to: <http://www.hsc.wvu.edu/rsafety/>

Biosafety

The Institutional Biosafety Committee (IBC) oversees all activities which pose a biohazard. Biosafety approval is required for the following activities:

- Activities involving infectious agents of plants, animals, and humans
- The use of serum and/or tissue from humans or non-human primates
- Any work involving wild mammals or their tissue
- Creation of transgenic eukaryotes
- Transfection using adenovirus-derived vectors or other vectors capable of infecting human cells.

Cloning of most genes in standard laboratory strains of E. coli and other approved host-vector systems is exempt from IBC review. (There are a few obvious exceptions-, for example, toxin genes, virulence factors, or complete virus genomes.). Information may be accessed at:

<http://oric.research.wvu.edu/biosafety>

Conflict of Interests

The University seeks to provide investigators with a research environment that will permit them to pursue important discoveries while maintaining the highest standards of research integrity. These discoveries and the expertise of the investigators in the University may attract commercial entities with interests in transferring scientific advances to the market place. Conflicts of interest may arise when the University and its investigators participate in making these discoveries available to benefit the public through interactions with commercial entities in areas of common scientific interest, such as consulting relationships, research collaborations, provision of materials through material transfer agreements, and licensing of technology. The University recognizes that commercialization of research is important to the public but must be done in ways that protect research integrity. The policies of the University are structured to balance openness and integrity in the conduct of research with the competitive demands of the marketplace and to allow the University and its investigators to avoid even the appearance of conflicts of interest that interfere with the ethical conduct of research. Additional information may be researched at:

<http://oric.research.wvu.edu/conint>

Export Controls

Export Control Laws (ECLs) are federal regulations that control the export of certain technologies, commodities, services, or information to other countries or to foreign nationals living in the United States (“deemed export”). These items are regulated for both national security and short supply reasons, and since 9/11, universities using these items in research have become increasingly scrutinized. Researchers should be especially careful when exporting certain technology or information abroad or to foreign nationals living within the United States, since ECLs may apply.

These regulations include the Export Administration Regulations (EAR), issued by the Department of Commerce’s Bureau of Industry & Security; the International Trafficking in Arms Regulations (ITAR), issued by the Department of State; and embargoes issued against certain countries, organizations, and individuals by the Department of Treasury’s Office of Foreign Assets Controls (OFAC). Items covered by the EAR or the ITAR, which apply to inherently commercial or inherently military items, respectively, may require a license for export if no exemption applies.

It is crucial that researchers be able to spot potential ECL issues when they arise. Export control violations result in strict penalties that may be enforced against both the researcher and the university. These penalties may include imprisonment, large fines, and suspension of export privileges.

Additional information may be researched at:

http://oric.research.wvu.edu/export_control

Integrity in Research

West Virginia University has an Office of Academic Integrity. That Office deals with allegations of academic misconduct including plagiarism, falsification, and fabrication of academic materials. Additional information may be researched at:

<http://www.wvu.edu/~lawfac/mmcdiarmid/aic/Office%20of%20Academic%20Integrity.htm>

Current Negotiated Rates

Fringe Benefits Rates

Current Fringe Benefit rates from federal cost/indirect rate agreement:

- **Full time - 24%**
- **Part time - 8.3%**
- **Graduate Students 8.2%**
- **Undergraduate Student - 1.8%**

Facilities and Administrative Rates

F&A Rates		FY2011	FY2012	FY2013
Research	on campus	47%	48%	48%
	off campus	26%	26%	26%
Instruction	on campus	55%	55%	55%
	off campus	26%	26%	26%
Other Sponsored Activity (OSA)	on campus	32.50%	32.50%	32.50%
	off campus	26.00%	26.00%	26.00%

Note: these are the Fringe and F&A rates as of the publication of this document. For the most current rates, go to:

http://osp.research.wvu.edu/pre_award/facilities_and_administration_rates

Other Resources

NIH Proposal Development Basics and Tools

http://grants.nih.gov/grants/grant_tips.htm

WVU Office of Sponsored Programs' Grant Proposal Guide

<http://osp.research.wvu.edu/r/download/38145>

HSC Sponsored Projects Support

<http://www.hsc.wvu.edu/ResOff/Research/Resources/>